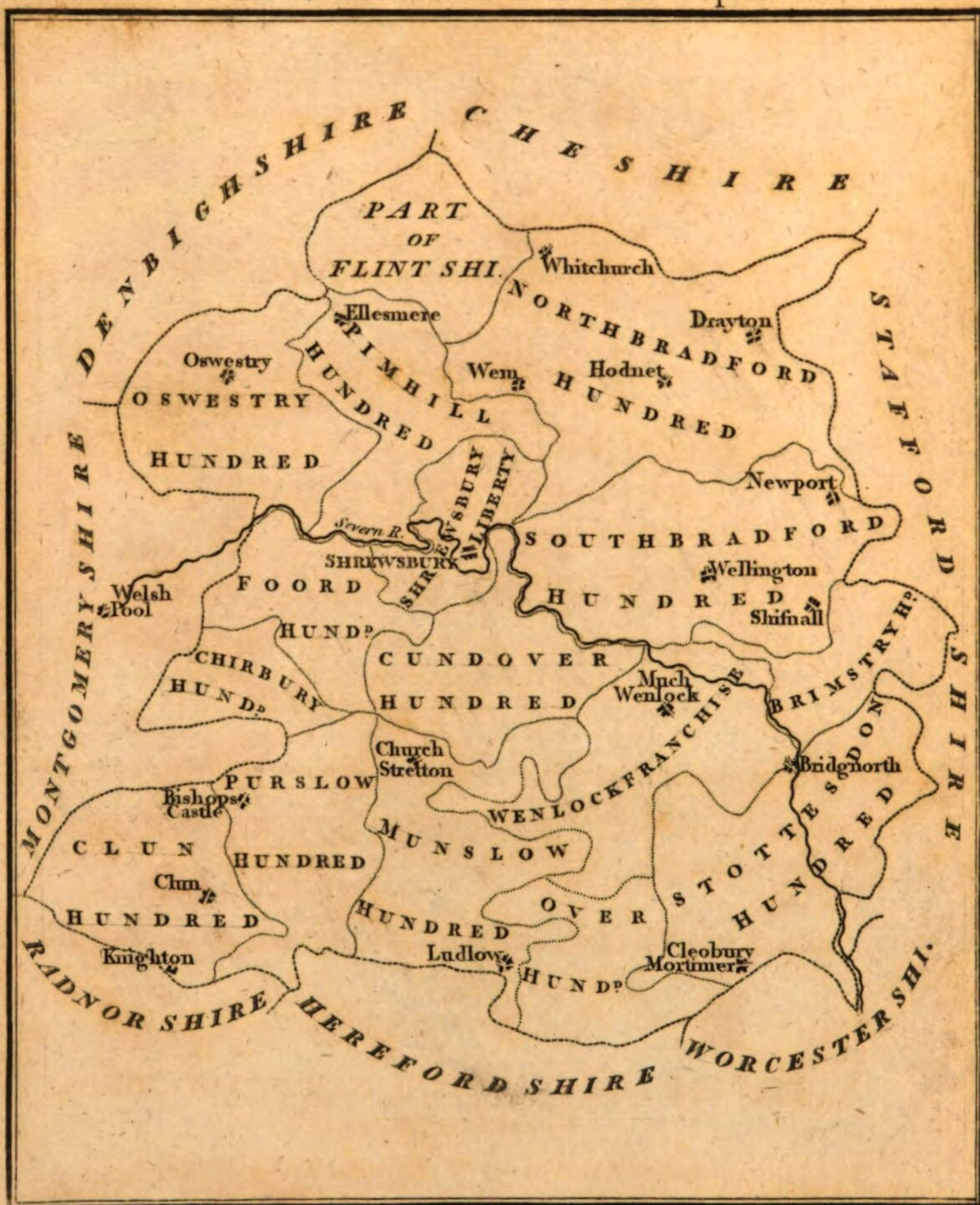


P Dec. 1408 ^r

Plymley

For the **SHROPSHIRE** Report.



Published for the Board of Agriculture.

J. Cary sculp.

105²

GENERAL VIEW
OF THE
AGRICULTURE
OF
SHROPSHIRE;

WITH
OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

DRAWN UP FOR THE CONSIDERATION OF
THE BOARD OF AGRICULTURE
AND INTERNAL IMPROVEMENT.

BY JOSEPH PLYMLEY, M.A.

ARCHDEACON OF SALOP, IN THE DIOCESE OF HEREFORD, AND
HONORARY MEMBER OF THE BOARD.

Hate not laborious work, neither husbandry, which the Most High hath
ordained.

ECCLUS. C. VII. V. 15.

LONDON:

PRINTED FOR SHERWOOD, NEELY, AND JONES,
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ADVERTISEMENT.

THE great desire that has been very generally expressed, for having the AGRICULTURAL SURVEYS of the KINGDOM reprinted, with the additional Communications which have been received since the ORIGINAL REPORTS were circulated, has induced the BOARD OF AGRICULTURE to come to a resolution of reprinting such as may appear on the whole fit for publication. It is proper at the same time to add, that the Board does not consider itself responsible for any fact or observation contained in the Reports thus reprinted, as it is impossible to consider them yet in a perfect state; and that it will thankfully acknowledge any additional information which may still be communicated: an invitation, of which, it is hoped, many will avail themselves, as there is no circumstance from which any one can derive more real satisfaction, than that of contributing, by every possible means, to promote the improvement of his Country.

N. B. *Letters to the Board, may be addressed to Lord SHEFFIELD, the President, No. 32, Sackville-Street, Piccadilly, London.*

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N. B. Letters to the Board, may be addressed to Lord Bute, the President, No. 32, Pall Mall Street, London.

P L A N
FOR RE-PRINTING THE
AGRICULTURAL SURVEYS.

BY THE PRESIDENT OF THE BOARD OF AGRICULTURE.

A BOARD established for the purpose of making every essential inquiry into the Agricultural State, and the means of promoting the internal improvement of a powerful Empire, will necessarily have it in view to examine the sources of public prosperity, in regard to various important particulars. Perhaps the following is the most natural order for carrying on such important investigations; namely, to ascertain,

1. The riches to be obtained from the surface of the national territory.
2. The mineral or subterraneous treasures of which the country is possessed.
3. The wealth to be derived from its streams, rivers, canals, inland navigations, coasts, and fisheries ;—and
4. The means of promoting the improvement of the people, in regard to their health, industry, and morals, founded on a *statistical* survey, or a minute and careful inquiry into the actual state of every parochial district in the kingdom, and the circumstances of its inhabitants.

Under

Under one or other of these heads, every point of real importance that can tend to promote the general happiness of a great nation, seems to be included.

Investigations of so extensive and so complicated a nature, must require, it is evident, a considerable space of time before they can be completed. Differing indeed in many respects from each other, it is better perhaps that they should be undertaken at different periods, and separately considered. Under that impression, the Board of Agriculture has hitherto directed its attention to the first point only, namely, the cultivation of the surface, and the resources to be derived from it.

That the facts essential for such an investigation might be collected with more celerity and advantage, a number of intelligent and respectable individuals were appointed, to furnish the Board with accounts of the state of husbandry, and the means of improving the different districts of the kingdom. The returns they sent were printed, and circulated by every means the Board of Agriculture could devise, in the districts to which they respectively related; and in consequence of that circulation, a great mass of additional valuable information has been obtained. For the purpose of communicating that information to the Public in general, but more especially to those Counties the most interested therein, the Board has resolved to re-print the Survey of each County, as soon as it seemed to be fit for publication; and, among several equally advanced, the Counties of Norfolk and Lancaster were pitched upon for the commencement of the proposed publication; it being thought most advisable to begin with one County on the Eastern, and another on the Western Coast of the island. When all these Surveys shall have been thus re-printed, it will be attended with little difficulty to draw up
an

an abstract of the whole (which will not probably exceed two or three volumes quarto) to be laid before His Majesty, and both Houses of Parliament; and afterwards, a General Report on the present state of the country, and the means of its improvement, may be systematically arranged, according to the various subjects connected with Agriculture. Thus every individual in the kingdom may have,

1. An account of the husbandry of his own particular county ; or,
2. A general view of the agricultural state of the kingdom at large, according to the counties, or districts, into which it is divided; or,
3. An arranged system of information on agricultural subjects, whether accumulated by the Board since its establishment, or previously known:

And thus information respecting the state of the kingdom, and agricultural knowledge in general, will be attainable with every possible advantage.

In re-printing these Reports, it was judged necessary, that they should be drawn up according to one uniform model; and after fully considering the subject, the following form was pitched upon, as one that would include in it all the particulars which it was necessary to notice in an Agricultural Survey. As the other Reports will be re-printed in the same manner, the reader will thus be enabled to find out at once where any point is treated of, to which he may wish to direct his attention.

PLAN OF THE RE-PRINTED REPORTS.

Preliminary Observations.

CHAP. I. *Geographical State and Circumstances.*

SECT. 1. Situation and Extent.

2. Divisions.

3. Climate.

4. Soil and Surface.

5. Minerals.

6. Water.

CHAP. II. *State of Property.*

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2. Tenures.

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SECT. 1. Houses of Proprietors.

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CHAP. V. *Implements.*

CHAP. VI. *Enclosing—Fences—Gates.*

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CHAP. VII. *Arable Land.*

- SECT. 1. Tillage.
 2. Fallowing.
 3. Rotation of Crops.
 4. Crops commonly cultivated, such as Corn, Pulse, Artificial Grasses; their Seed, Culture, Produce, &c*.
 5. Crops not commonly cultivated.

CHAP. VIII. *Grass.*

- SECT. 1. Natural Meadows and Pastures.
 2. Hay Harvest.
 3. Feeding.

CHAP. IX. *Gardens and Orchards.*CHAP. X. *Woods and Plantations.*CHAP. XI. *Wastes.*

* Where the quantity is considerable, the information respecting the crops commonly cultivated may be arranged under the following heads—for example, WHEAT :

1. Preparation	{ tillage, } { manure. }	6. Culture whilst growing	{ hoe, } { weeding, } { feeding. }
2. Sort.		7. Harvest.	
3. Steeping.		8. Threshing.	
4. Seed (quantity sown).		9. Produce.	
5. Time of sowing.		10. Manufacture of bread.	

In general, the same heads will suit the following grains :

Barley. Oats. Beans. Rye. Pease. Buck-wheat.

Vetches — Application.

Cole-seed — { Feeding, }
 { Seed. }

Turnips — { Drawn, }
 { Fed, }
 { Fed on grass, }
 { — in houses. }

CHAP.

CHAP. XII. *Improvements.*

- SECT. 1. Draining.
2. Paring and Burning.
3. Manuring.
4. Weeding.
5. Watering.

CHAP. XIII. *Live Stock.*

- SECT. 1. Cattle.
2. Sheep.
3. Horses, and their Use in Husbandry, compared to Oxen.
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6. Poultry.
7. Pigeons.
8. Bees.

CHAP. XIV. *Rural Economy.*

- SECT. 1. Labour—Servants—Labourers—Hours of Labour.
2. Provisions.
3. Fuel.

CHAP. XV. *Political Economy, as connected with, or affecting Agriculture.*

- SECT. 1. Roads.
2. Canals.
3. Fairs.
4. Weekly Markets.
5. Commerce.
6. Manufactures.
7. Poor.
8. Population.

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CHAP. XVI. *Obstacles to Improvement; including General Observations on Agricultural Legislation and Police.*

CHAP. XVII. *Miscellaneous Observations.*

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2. Weights and Measures.

3. Supply of London.

4. Experimental Farm.

• CONCLUSION. *Means of Improvement, and the Measures calculated for that Purpose.*

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PERFECTION in such inquiries is not in the power of any body of men to obtain at once, whatever may be the extent of their views or the vigour of their exertions. If LOUIS XIV. eager to have his kingdom known, and possessed of boundless power to effect it, failed so much in the attempt, that of all the provinces in his kingdom, only one was so described as to secure the approbation of posterity *, it will not be thought strange that a Board, possessed

* See VOLTAIRE'S *Age of LOUIS XIV.* vol. ii. p. 127, 128, edit. 1752.

The following extract from that work will explain the circumstance above alluded to :

“ LOUIS had no COLBERT, nor LOUVOIS, when, about the year 1698, for the instruction of the Duke of BURGUNDY, he ordered each of the intendants to draw up a particular description of his province. By this means an exact account of the kingdom might have been obtained, and a just enumeration of the inhabitants. It was an useful work, though all the intendants had not the capacity and attention of Monsieur DE LAMOIGNON DE BAVILLE. Had what the King directed been as well executed, in regard to

sessed of means so extremely limited, should find it difficult to reach even that degree of perfection which perhaps might have been attainable with more extensive powers. The candid reader cannot expect in these Reports more than a certain portion of useful information, so arranged as to render them a basis for further and more detailed inquiries. The attention of the intelligent cultivators of the kingdom, however, will doubtless be excited, and the minds of men in general gradually brought to consider favourably of an undertaking which will enable all to contribute to the national stores of knowledge, upon topics so truly interesting as those which concern the agricultural interests of their country ; interests which, on just principles, never can be improved, until the present state of the kingdom is fully known, and the means of its future improvement ascertained with minuteness and accuracy.

every province, as it was by this magistrate in the account of Languedoc, the collection would have been one of the most valuable monuments of the age. Some of them are well done ; but the plan was irregular and imperfect, because all the intendants were not restrained to one and the same. It were to be wished that each of them had given, in columns, the number of inhabitants in each election ; the nobles, the citizens, the labourers, the artisans, the mechanics ; the cattle of every kind ; the good, the indifferent, and the bad lands ; all the clergy, regular and secular ; their revenues, those of the towns, and those of the communities.

“ All these heads, in most of their accounts, are confused and imperfect ; and it is frequently necessary to search with great care and pains, to find what is wanted. The design was excellent, and would have been of the greatest use, had it been executed with judgment and uniformity.”

P R E F A C E.

MR. BISHTON, the respectable Author of the Original Report for Shropshire, thinking the general view he had favoured the Board of Agriculture with sufficient, and finding it inconvenient to give up the time necessary for the more detailed accounts that were required, I could not avoid yielding to the desire expressed by Sir JOHN SINCLAIR (enforced by his own merits, as Founder and President of the Institution, and aided by the flattering importunity of two other friends), that I would undertake the work now offered to the Public. But the difficulty of obtaining any exact geographical knowledge of a county which appears never to have been surveyed*, was a pri-

* I have since seen a small map of this county, thus entitled :
“ This impression is newly engraved from the original of JOHN ADAMS, Esq. author and publisher of the large map of England, by whom an actual survey was made of Shropshire in the reign of King CHARLES the Second, from whence this impression is published by his relation, BENJAMIN PORTER, 1734.”
In this map, Shrewsbury is made the prime meridian. The parts of Shropshire contiguous to Wales, were surveyed for Mr. EVANS' valuable map of North Wales.

mary obstruction ; the scope of Shropshire farming being so general, and so much intermixed with improvements of all kinds from other parts of the kingdom, seemed to afford little room for appropriate information ; and the unwillingness with which an extrinsic engagement is attended to, where no day of leisure occurs, have all contributed to delay the execution of my promise, and to beget a hope that it may eventually be dispensed with. But I am compelled, by the partial suggestions of Lord CARRINGTON, who presides over the Board at present, with so much measured zeal and useful attention, to arrange and revise the information I had collected, and the observations that had occurred to me.

That a clergyman should appear as the writer, or editor, of what is called an Agricultural Report, may, however, seem to require some apology ; and I wish to have it understood, that I should be very sorry to see persons, whose time is more particularly dedicated to the service of Religion, engage in the pursuits of ordinary farmers. But it should be recollected, that “ the Board of Agriculture ” is a Board also of “ internal improvement *.” What I may call the voluntary part of

* At a meeting of the Committee of the Society for Bettering the Condition of the Poor, November 6, 1801, it was resolved, that a correspondence with the Board of Agriculture, &c. on the objects of their institution, should be proposed.

this book, so far as my own communications are concerned, is copied, in a great measure, from papers I presented long ago to the Board, *on the condition of labourers, on annexing land to cottages, &c. &c.* by which I sought to gain the attention of the Members to subjects connected with the moral improvement, as well as with the outward prosperity, of a large class of our fellow-subjects, and whose welfare was also closely linked with matters of an agricultural nature. Further, it will be allowed me, that the theory or facts of vegetation, the nature or composition of soils, whatever may assist the labour of man or beast, whatever may extend wholesome food, or ameliorate the situation of any living animal, may be looked upon as the allowable amusements, or ranked among the secondary duties of a Country Clergyman. Where a Parish Priest has glebe-land, it is his duty to see it properly cultivated; but, independent of this obligation, the income, from a large majority of livings, is so small, that the benefit of raising provisions from his glebe, or from hired land, where there is no glebe, or where it is insufficient, is become requisite to the maintenance of a Country Clergyman; but this should not involve him in the business of buying and selling, or in attendance on fairs or markets.

Among

Among the illustrious characters who are Members of the Board of Agriculture, I have had the honour of meeting some eminent Prelates of our Church* ; and as no country ever boasted a more patriotic Institution, so no Society ever possessed a prouder list, if we look either at the rank, the property, or the talents of very many of the number composing it. In adding, that the Rev. Mr. GISBORNE's name is among those enumerated, as contributors to the re-printed Report for Staffordshire, I adduce also a sanction that will not soon be disputed.

Having said thus much in explanation of the propriety with which a Clergyman may appear in a work of this kind, I have to add, that I am very little of a practical farmer, but, living chiefly in the country, I have, from an early age, thought more or less of the improvement of its artificial state. In the parochial visitations of my Archdeaconry, a district for observation has occurred to me ; and in inquiring into the state of the several parishes, facts, connected with the cultivation of the country, have come before me.

The communications I have been directly favoured with, and those copied from such of the Original Reports for this County as were returned

* The Archbishops of CANTERBURY and YORK, and the Bishops of LONDON and DURHAM, are Members by the original Charter.

to the Board with marginal remarks, as well as the parts of the Original Report itself, will be given as quotations, as often as they occur, with the names of the Gentlemen to whom the public are under obligations on this account.

Longnor, May 25, 1801.

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London, May 25, 1801.

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CORRECTIONS AND ERRATA.

Page 38, line 15, add, after the word "rain," *at Longnor, eight miles south of Shrewsbury.*

- 44, 15, for "is," read *are*.
75, 13, for "acecited lead," read *acetite of lead*.
72, 2, &c. for "Wick," read *Wich*.
94, 14, after "themselves," add *are*.
100, 16, for "luxury," read *ostentation*.
230, 1, dele "on the seventh day," and add, *from Saturday night to Monday morning*.
248, for "comparié," read *comparée*.
3, for "espices," read *espèces*.
4, for "les veau," read *le veau*.
5, for "les nerf," read *les nerfs*.
7, for "nombre," read *nombre*; for "ce que peut," read *ce qui peut*; for "prosesteur," read *prosecteur*; after which word there is to be a full stop.
8, for "des especes," read *les espèces*; for "disséquees," read *disséquées*.



CORRECTIONS AND ERRATA

- Page 26, line 12, add, after the word "rain," at the end, eight miles south of Springfield.
- 44, 12, for "at," read "on."
- 72, 12, for "attached," read "across of land."
- 72, 22, for "at," read "at the."
- 94, 14, after "themselves," add "one."
- 100, 16, for "luxury," read "luxurious."
- 230, 1, for "on the seventh day," add, "from Saturday night to Sunday morning."
- 236, for "complaint," read "complaints."
- 2, for "espices," read "spices."
- 4, for "les veau," read "le veau."
- 5, for "is not," read "is not."
- 7, for "number," read "number;" for "ce que peut," read "qui peut;" for "prosement," read "prosement;" after which word there is to be a full stop.
- 8, for "des espices," read "des espices;" for "disponces," read "disponces."

AGRICULTURAL SURVEY
OF
SHROPSHIRE.

CHAPTER I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECTION I.—SITUATION AND EXTENT.

SHROPSHIRE is an inland county, bounded on the N. by Denbighshire, the detached part of Flintshire, and by Cheshire; E. by Staffordshire; S. by Worcestershire and Herefordshire; and W. by Radnorshire, Montgomeryshire, and Denbighshire. It lies nearly within 52° and 53° north latitude, and 2° and 3° west longitude from London. I state the situation thus generally, for I know of no accurate observations that have been made; and the different maps of the county vary considerably in the number of minutes above and below the latitude and longitude I have specified. They agree no better in the length and breadth they assign to the county. ROCQUE's map, printed in 1752, which is the largest, states in the margin, that it is 50 miles long, 42 broad, 218 in circumference; that it contains 1328 square miles, or 849,940 acres. But if ROCQUE's map is measured by the scale it professes, it makes the county only 49 miles from N. to S. and about $37\frac{1}{2}$ miles from

E. to W., but to contain about 1400 square miles, or 896,000 acres. BOWEN's map (published between the years 1751 and 1772), measures, according to the scale given, full as much in length and breadth as ROCQUE asserts the dimensions to be; but in specifying them in the margin, he calls the length 40 miles, the breadth 33, and the circumference 134 miles. I do not know that we shall be nearer the truth by quoting SPEED's map, the large one by BASIL WOOD, or that by MORDEN. BOWEN's map appears to me less inaccurate than that by ROCQUE; but the latter appears to have been followed by the new maps. The original Report gives the "length and breadth as 40 miles by 35, on the authority of Mr. GOUGH, in his last edition of CAMDEN's *Britannia*," and that, "according to Dr. HALLEY, it contains 890,000 acres, or about a 45th part of England and Wales." The shape of this county is an irregular parallelogram: the different statements of length and breadth given, afford us some idea of the mean extent; and as to the circumference of what is contained within indented lines, it is useless to inquire, as the statement may mislead, and can rarely inform.

SECT. II.—DIVISIONS.

THE principal natural division of this county is made by the river Severn, which runs from N.W. to S.E., and divides it into parts not very unequal. The Watling-street, or Roman highway, which enters the county on the east, between Crackley-bank and Weston, and passes through it in a bending line, to Leintwardine, in Herefordshire, on the southern borders; is only partially used as a main road, and is much less of a division than the turnpike roads that run through Shrewsbury, from Whitchurch to Ludlow, and

and from Shiffnal to Oswestry. There are fifteen hundreds, or districts answering thereto, viz. Oswestry, Pimhill, Bradford North, Bradford South, and Brimstry, on the N. E. side of the Severn; the liberty of Shrewsbury, the franchises of Wenlock, and the hundred of Stottesden, extending on both banks of that river; the hundreds of Ford, Chirbury, Cundover, Munslow, Overs, Purslow, and the Honour of Clun, on the S. W. side of the Severn. All these divisions are disproportionate in size, and irregular in shape. The same may be said of parishes. They have too, in common with our counties, insulated and detached parts: they vary, in point of extreme length, from one mile and under, to fourteen miles and more; and in extreme breadth, from half a mile to ten miles. A small proportion have the same extreme diameter, that is, are about as broad as long; but then the boundary is often irregular, and the length and breadth are, in general, disproportionate. Several parishes are intersected by other parishes, or have one or more of their districts detached, and, in some instances, at a considerable distance. Some are detached parts of counties; others comprehend part of two counties; still more are composed of parts of different hundreds. They contain from one to sixteen townships. There are instances of a township being a detached part of an hundred. Townships, again, are not always bounded within their parishes, several being in part in one parish, and in part in another parish. They are composed of one or more hamlets, and do not always coincide with the townships, so called, by which the land-tax is gathered. The ecclesiastical divisions of the kingdom do not so properly belong to a work of this kind; but as parishes were originally such, though they have since obtained civil distinctions also, it may be

here noted, that this county is in part in the three dioceses of Hereford, of Litchfield and Coventry, and of St. Asaph. The detached parish of Hales-Owen is in that of Worcester. The archdeaconry of Salop in Hereford diocese, comprehends, together with about one-half of this county, part of Montgomeryshire, Radnorshire, Herefordshire, and Worcestershire. The archdeaconry of Salop in Litchfield and Coventry diocese, is principally within the county: a few of the Shropshire parishes are in the archdeaconry of Stafford, one in that of Hereford, and others are in the archdeaconry of St. Asaph, which is co-extensive with the diocese, and the office is there holden by the bishop. The ecclesiastical deanries, again, comprehend parts of different counties and of different hundreds. The civil division of manors, though frequently confined to the whole or part of a parish, comprehends, in some instances, part of two parishes, and has within it parts of different townships; and the jurisdictions of court leets are not always confined to the hundred they are situated in. Thus difficult is it to speak of the divisions of a county, from the want of coincidence in boundaries and jurisdictions; many of them appearing independent of each other, rather than separate, but component parts, of one and the same scheme. The history of that experience from whence our constitution has so happily arisen, points out circumstances from which these varied limitations of district have grown. With respect to parishes, for instance, they seem to have originated, however disputable the exact date of their origin may be, from lords of manors, and persons of extensive landed property, building churches, as Christianity advanced in these kingdoms, for the use of themselves and tenants, and to which churches they procured the tithes arising from their estates to be paid, which, if not specially appro-

appropriated, would have been paid to the bishop of the diocese, for the use of the clergy in general, and of such pious purposes as he deemed necessary. Now the founders of any church would wish that all their lands should pay tithe thereto, rather than to any other, and in preference to their tithes being applied at the discretion of the bishop; so that where the estate of any founder of a church was scattered, the district appropriated to pay tithe to it, would be scattered also; and it was from the junction of these circumstances, a church being built, and a district appointed to pay tithe to its minister, that parishes had their beginning*. It is not, however, easy now to say what are parishes. Dr. COWELL, as quoted by Dr. JOHNSON in his Dictionary, defines a district, parochial, that is, the "particular charge of a secular priest;" and Mr. Justice BLACKSTONE says, "a parish is that circuit of ground which is committed to the charge of one parson, or vicar, or other minister, having cure of souls therein." Now, if we adhere to this definition, the number of parishes must have increased by the operation of Queen ANNE's bounty, which, being allotted to any chapel of ease, or subordinate church, makes it thenceforth presentative, and not to be holden by the minister of the mother-church, as member thereof. Many chapels also, ecclesiastically rated as members of a superior church, have always been under a different patronage, so that separate and independent ministers have been presented thereto. The rite of sepulture has been supposed by some a constituent part of a parochial church; this, however, is not so in point of fact.

We may say, that such and such districts are parishes, because they have every right and every duty that can constitute that distinction, either civilly or ecclesiastically; but

* Vide BLACKSTONE's Com. vol. i. p. III. 8vo. 8th edit.

of others, the situation is so equivocal, that it is not safe to assert of any county, or diocese, that it contains only so many parishes. The Editor of the Staffordshire Report, has given a list of parishes in that county, with this proviso, that, “by the term *parish*, is meant a tract of land, having a place of worship, and united, in some degree, by a common or mutual interest, without regarding the ecclesiastical constitution or dependence upon a superior or mother-church.” Now, as districts became parochial by degrees, by the gradual erection of churches by landholders (as was mentioned before), whilst others may have arisen from royal or episcopal munificence, or may have been built by subscription, or founded by religious societies, so their number, it should seem, has continued to increase; for though several chapels to religious houses have been lost*, other chapels of ease have been erected, and the constitution of a large number has been altered by the operation of Queen ANNE’s bounty, and still continues to be thus altered. The purposes for which a district was made parochial, have been added to by the poor laws: churchwardens have now, by statute, certain civil duties, as well as ecclesiastical, and are thereby constituted joint overseers of the poor. It may be allowed then, perhaps, that wherever there is a church, that is not now holden as a chapel of ease under the presentation and institution to a mother-church, and that the district for which such church serves, raises a separate rate for the maintenance of its own poor, &c. that such district is parochial†. BOWEN, in his map of Shropshire, states the number of parishes at 170; in GIB-

* Above 80 churches or chapels have gone to decay in this county; some of which were certainly parochial, but many more existing parishes were formerly subordinate districts.

† It ought to have separate officers, so that the want of them, where the case occurs, is from neglect, not necessity.

son's edition of CAMDEN's *Britannia*, 1695, they are said to be about 170; which, it will be seen by the following list, is a very inferior statement.

The first column contains the name of all the churches and chapels, according to the arrangement in BACON's edition of the *Liber Regis*, and with his designations, as far as they go; but to which are added, such fabrics as are therein omitted. The second column contains the names of the deanries they are situated in. The third column, the hundred that the church is situated in, though the whole of the parish may not be in that hundred. And the fourth column, observations elucidating the place intended, and shewing how far its district is or is not parochial. In doing this, I have been much assisted in the parts belonging to the dioceses of Litchfield and Coventry, and of St. Asaph, by the Rev. EDWARD WILLIAMS, Fellow of All Souls college, in Oxford, and of Eaton, in this county, whose uniform accuracy gives a stamp of peculiar authenticity to any communications he may make.

DIocese of Litchfield and Coventry.

Archdeaconry of Salop.

Baschurch,

Name of the Fabric.	Deanry.	Hundred.	Observations.
Abrighton, alias Al-brighton, V.	Newport.	Brimstry.	A parish and a corporation.
Abrighton, Cur.	Salop.	Pimhill.	A parish.
Acton Pigot, chapel to Burnel.	Ditto.	Cundover.	{ Township within Acton Burnel parish. No service.
Adderley, R.	Newport.	Bradford North.	A parish.
Arcal parva, Cur.	Ditto.	Ditto.	Ditto : called Child's Ercall.
Arcal magna, V.	Salop.	Bradford South.	Ditto : called High Ercall, or Ercol.
Astley, chapel to St. Mary.	Ditto.	Shrewsbury.	Separate assessment and minister.
Aston, ditto to Edgmond.	Newport.	Bradford South.	{ Called Church Aston : a separate assessment, but included in the presentation to Edgmond.
Attingham, alias At-cham, V.	Salop.	Ditto.	A Parish.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Baschurch, V.	Salop.	Pimhill.	A parish.
Battlefield, Cur.	Ditto.	Shrewsbury.	Ditto.
Berrington, R.	Ditto.	Cundover.	Ditto.
Bicton, chapel to St. Chad, Salop. }	Ditto.	Shrewsbury.	{ In the parish of St. Chad, and in the patronage of the minister.
Bildewas, Cur.	Newport.	Bradford South.	{ A parish, and peculiar: generally written Buildwas.
Bollas, <i>alias</i> Bowlas, R.	Ditto.	Ditto.	{ A parish: generally written Bolas, or Bolas magna.
Bonigall, chap. to Stockton. }	Ditto.	Brimstry.	{ A parish: mentioned under Stockton, in the Lib. Regis.
Broughton, Cur.	Salop.	Shrewsbury.	A parish.
Burnel, <i>alias</i> Acton Burnel, R. }	Ditto.	Cundover.	A parish: called Acton Burnel.
Chetwyn, <i>alias</i> Chetwynd, R. }	Newport.	Bradford South.	A parish.
Clive, chap.	Salop.	Shrewsbury.	Ditto.

Cundover,

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Cundover, V.	Salop.	Cundover.	A parish.
Chockshute, chapel to } Ellesmere.	Ditto.	Pimhill.	In the parish of Ellesmere.
Corverell, chapel to Prees.	Ditto.	Bradford North.	In the parish of Prees.
Counde, <i>alias</i> Cund, R.	Ditto.	Cundover.	A parish.
Cressage, chapel to Cund.	Ditto.	Ditto.	{ Holden under the presentation to Cund, but with most parochial rights.
Dawley magna, Cur.	Newport.	Bradford South.	A parish.
Donington, R.	Ditto.	Brimstry.	Ditto.
Drayton, in Hales, V.	Ditto.	Bradford North.	{ Ditto: commonly called Drayton, or Market Drayton.
Dudleston, chapel to El- } lesmere.	Salop.	Owestry.	In Ellesmere parish.
Eaton Constantine, lib. } cap. sive Rect.	Ditto.	Bradford South.	A parish and rectory.
Edgmond, R.	Newport.	Ditto.	A parish.

DIVISIONS.

II	<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
	Edstarston, <i>alias</i> Estarston, <i>alias</i> Eldarston, } chap. to Wem.	Newport.	Bradford North.	{ Commonly written Edstaston, in Harley, the parish of Wem.
	Eyton of Wildmore, R.	Ditto.	Bradford South.	{ A parish: inserted, "cum Wallington," in BACON's Liber Regis, meaning Wellington, to which church it is united.
	Eyton upon Severn, } chapel to Wroxeter. }	Salop.	Ditto.	This chapel does not exist.
	Ellismere, V.	Ditto.	Pinhill.	A parish: usually written Ellesmere.
	Felton, <i>alias</i> West Felton, R. }	Ditto.	Oswestry.	A parish.
	Fitz, R.	Ditto.	Pinhill.	Ditto.
	Frodesley, R.	Ditto.	Cundover.	Ditto.
	Grinsell, R.	Ditto.	Shrewsbury.	Ditto.
	Hadnall, chapel to Grinsell.	Ditto.	Ditto.	{ Separate assessment and minister, appointed by the rector of Middle.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Harley, R.	Salop.	Cundover.	A parish.
Hinstock, R.	Newport.	Bradford North.	Ditto.
Hodnet, R.	Ditto.	Ditto.	Ditto.
Hordley, R.	Salop.	Pimhill.	Ditto.
Idsall, <i>alias</i> Sheffnal, V.	Newport.	Brimstry.	Ditto: usually called Shiftnal.
Ightfeld, R.	Salop.	Bradford North.	Ditto.
Kemberton, R.	Newport.	Brimstry.	Ditto.
Kenley, Cur.	Salop.	Cundover.	Ditto, and a rectory.
Kinnarsley, R.	Newport.	Bradford South.	Ditto: often written Kinnersley.
Langley, chapel to Burnel.	Salop.	Cundover.	Ditto.
Langford, <i>alias</i> Long- ford, R. }	Newport.	Bradford South.	{ A parish: commonly called Long- ford.
Le Blockhurst, Cur.	Salop.	Bradford North.	Ditto: ditto Lee Brockhurst.
Leebotwood, Cur.	Ditto.	Cundover.	A parish.
Leighton, V.	Ditto.	Bradford South.	Ditto.
Lilleshall, V.	Newport.	Ditto.	Ditto: often written Lilleshal.
Loppington, V.	Salop.	Pimhill.	A parish.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Longdon, chap. to Ponts-bury.	Salop.	Bradford South.	{ Ditto, meaning Long, or Longdon upon Tern: it is not connected with Pontsbury, though there is such a chapel in Hereford diocese. Long is a peculiar.
Longnor, chapel to Cundover.	Ditto.	Cundover.	
Middle, R.	Ditto.	Pimhill.	
Monsford, V.	Ditto.	Ditto.	
Moreton Corbet, R.	Ditto.	Bradford North.	
Moreton Say, chapel to Hodnet.	Newport.	Ditto.	A parish.
Nestrange, V.	Salop.	Pimhill.	Ditto: usually called Montford.
Nesscliffe, chapel to Nestrange.	Ditto.	Ditto.	A parish.
			A separate minister and assessment.
			A parish: commonly called Great Ness.
			{ Dilapidated, and a school now occupies its place.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Nesse Parva, chapel to } Berrington, }	Salop.	Pimhill.	{ Commonly called Little Ness. Bas- church is here meant by Berring- ton, but the district is parochial, though the chapel is annexed to Baschurch.
Newport, Cur.	Newport.	Bradford South.	
Newtown, chapel to Wem.	Ditto.	Bradford North.	
Norton in Hales, R.	Ditto.	Ditto.	
Pelton, <i>alias</i> Petton, V.	Salop.	Pimhill.	
Pitchford, R.	Ditto.	Cundover.	A parish.
Prees, V.	Ditto.	Bradford North.	Ditto.
Preston Gobalds, cha- pel to Prees. }	Ditto.	Shrewsbury.	Ditto.
Preston upon Wildmore, }	Newport.	Bradford South.	Ditto.
chapel, or rectory.			

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Priors Lee, chapel to Idsall. }	Newport.	Bradford South.	{ In the parish of Shiffnal, called here Idsall. The patronage and in- cumbency is distinct.
Rodington, R.	Salop.	Ditto.	A parish.
Ruiton, <i>alias</i> Ryton, V.	Ditto.	Oswestry.	{ Ditto: usually called Ruyton of the eleven towns, or Ruyton near Baschurch.
Ryton, <i>alias</i> Raiton, R.	Newport.	Brimstry.	Ditto: Ryton Juxta, Beckbury.
St. Aleman, V.	Salop.	Shrewsbury.	A parish.
St. Chad, Cur. or V.	Ditto.	Ditto.	Ditto.
St. Cross, V.	Ditto.	Ditto.	{ One assessment and incumbency.
St. Giles, united to St. Cross. }	Ditto.	Ditto.	{ St. Giles is the mother-church, though the duty is chiefly done at St. Cross, or the abbey church.
St. Julian, Cur.	Ditto.	Ditto.	A parish.
St. Mary, Cur.	Ditto.	Ditto.	Ditto, and a peculiar.

DIVISIONS.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Shawburie, V.	Salop.	Bradforth North.	{ A parish : commonly written Sha-Tonge, bury, or Shawbury.
Shenton, <i>alias</i> Sheinton, R.	Ditto.	Stottesden.	Ditto : ditto Shineton.
Smethcote, R.	Ditto.	Cundover.	A parish.
Staunton, <i>alias</i> Stanton upon Hine Heath. }	Ditto.	Bradford North.	Ditto : called Stanton.
Stepleton, <i>alias</i> Staple- ton, R. }	Ditto.	Cundover.	A parish.
Stirchley, R.	Newport.	Bradford South.	Ditto.
Stockton, R.	Ditto.	Brimstry.	Ditto.
Stoke upon Teyrn, R.	Ditto.	Bradford North.	Ditto.
Sutton Maddock, V.	Ditto.	Brimstry.	Ditto.
Tiberton, chapel to Edg- mond. }	Ditto.	Bradford South.	{ A separate assessment, but holden under the presentation to Edgmond.
Tilstock, ch. to Whit- church. }	Salop.	Bradford North.	{ Separate assessment and minister, appointed by the rector of Whit- church.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Tonge, Cur.	Newport.	Brimstry.	A parish.
Uffington, Cur.	Salop. —	Bradford South.	Ditto.
Uppington, <i>alias</i> Uffington, Cur.	Ditto.	Ditto.	{ Ditto, and a peculiar: it should have been written Uppington, without the <i>alias</i> , &c.
Upton magna, R.	Ditto.	Ditto.	A parish.
Upton parva, R.	Newport.	Ditto.	Ditto: called Waters Upton.
Welsh-hampton, Cur.	Salop.	Pimhill.	A parish.
Wellington, V.	Ditto.	Bradford South.	Ditto.
Wem, R.	Newport.	Bradford North.	Ditto.
Weston under Red Castle, chapel to Hodnet. }	Ditto.	Ditto.	In the parish of Hodnet.
Whitchurch, R.	Salop.	Ditto.	A parish.
Wixal, chapel to Prees.	Ditto.	Ditto.	A peculiar, in the parish of Prees.
Wormbridge, Cur.	Ditto.	Bradford South.	A parish.
Whittington, chapel to Upton. }	Ditto.	Ditto.	{ A parish: should be written Whittington.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Wrockerdine, V.	Salop.	Bradford South.	{ A parish : sometimes written Rock-wardine.
Wroxeter, V.	Ditto.	Ditto.	
ARCHDEACONRY OF STAFFORD.			
Cheswardine, V.	Lapley & Treizull.	Bradford North.	A parish.
Quatt, R.	Ditto.	Stottesden.	Ditto.
Worfield, V.	Ditto.	Brinstry.	Ditto.
Wore, chapel to Muggleston.	Newcastle & Stone.	Bradford North.	{ Muckleston, Muggleston, or Muxton, is in Staffordshire: Wore has a separate minister and assessment.
PECULIAR OF BRIDGNORTH.			
Alveley, Cur.	—	Stottesden.	A parish.
Bridgnorth, St. Leonard's,	—	Ditto.	Ditto.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Bridgnorth, St. Mary	—	Stottesden.	A parish.
Magdalen.	—	Ditto.	Ditto.
Quatford, Cur.	—	Brimstry.	Ditto.
Claverley, Cur.	—	Shrewsbury.	In the parish of St. Marys, Shrewsbury, and is not in Bacon's edition of the Liber Regis. The patronage and incumbency are distinct.
Berwick, chap.	Salop.		In the parish of Alvely.
Coton, chap.	—		In the parish of Ercal magna. Neither of these are mentioned by Bacon.
Rowton, chap. called	—		
Ruton.	—		

Wood-

Name of the Fabric.

Deanry.

Hundred.

Observations.

Woodcoat, chap. to Sheriff Hales, Staffordshire. }

Newport.

Bradford South.

Woodcoat is in the archdeaconry of Stafford: it is only mentioned by Bacon in a note to Sheriff Hales. Woodcoat passes under the presentation to Sheriff Hales, but has a separate assessment for the poor.

DIOCESE OF WORCESTER.

ARCHDEACONRY OF WORCESTER.

DIVISIONS.

Hales Owen, V.

Kidderminster.

Brimstry.

{ A parish: part in this county, and detached from it.

Oldbury, in Shropshire, chap. in the parish of Hales Owen. Vicar of Hales Owen puts in the minister. }

Ditto.

Ditto.

{ I believe the statement given by Bacon from the Liber Regis, is correct, though he seems to doubt its being so.

St. Kenelm's, chap. to Hales Owen. }

Ditto.

Ditto.

{ Within the parish of Hales Owen, but has a separate patronage.

DIOCESE OF HEREFORD.

ARCHDEACONRY OF SALOP.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Abdon, R.	Wenlock.	Munslow.	A parish.
Acton Round, Cur. chapel to Wenlock magna.	Ditto.	Stottesden.	{ Ditto, and no connexion with Wen- lock.
Acton Scott, R.	Ditto.	Munslow.	A parish.
Alberbury, V.	Pontsbury.	Ford.	Ditto.
Ashford Bowdler, in co. Hereford.	Ludlow.	Munslow.	Ditto : it is in Shropshire.
Ashford Carbonel, in co. Salop ; chap. to Here- ford parva ; deanry of Leominster : a pe- culiar.	Ditto.	Ditto.	A parish.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Aston Air, Cur.	Stottesden.	Stottesden.	{ A joint incumbency with Morvield, Brom-
Aston Botterel, R.	Ditto.	Ditto.	
Ashley Abbots, Cur.	Ditto.	Ditto.	A parish.
Bagstore, <i>alias</i> Badgesore, } <i>alias</i> Badger, R. }	Wenlock.	Wenlock.	Ditto: usually written Astley Abbots.
Barrow, Cur. chap. to } Wenlock magna. }	Ditto.	Ditto.	Ditto: usually written Badger.
Benthall, Cur.	Ditto.	Ditto.	{ Ditto: no connexion with Wen-
Bedston, R.	Clun.	Purslow.	
Bettus, Cur.	Ditto.	Clun.	Ditto.
Beckbury, R.	Wenlock.	Wenlock.	Ditto.
Billingsley, R.	Stottesden.	Stottesden.	Ditto.
Bishop's Castle, V.	Clun.	Purslow.	Ditto.
Bitterley, R.	Ludlow.	Overs.	Ditto.
Bold, chap. to Aston Bot-	Stottesden.	Stottesden.	{ A township to Aston Botterel: the ch.
terel. }			

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>
Bromfield, V.	Ludlow.	Munslow.
Broseley, R.	Wenlock.	Wenlock.
Bucknell, V. in co. Hereford.	Clun.	Purslow.
Burford, R. three portions.	Burford.	Overs.
Burton, Cur.	Wenlock.	Wenlock.
Burwarton, R.	Stottesden.	Stottesden.
Cainham, V.	Ludlow.	Overs.
Cardington, V.	Wenlock.	Munslow.
Cardeston, R.	Pontsbury.	Ford.
Chelmarsh, V.	Stottesden.	Stottesden.
Chetton, R.	Ditto.	Ditto.

DIVISIONS.

<i>Observations.</i>	<i>Chir.</i>
A parish.	
Ditto.	
Ditto: the church and township of Bucknell are in Shropshire; though Bufton township in this parish, is in Herefordshire.	
A parish.	
In Wenlock parish, but the incumbencies have been separated, this chapel having been augmented with Queen Anne's bounty.	
A parish.	
Ditto.	
Ditto.	
Ditto.	
Ditto.	
Ditto.	

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Chirbury, V.	Pontsbury.	Chirbury.	A parish.
Cleberie, <i>alias</i> Cleobury Mortimer, V. }	Burford.	Stottesden.	Ditto: usually written Cleobury.
Cleobury North, R.	Stottesden.	Ditto.	A parish.
Clun, V.	Clun.	Clun.	Ditto.
Clunbury, Cur.	Ditto.	Purslow.	Ditto.
Clungonaz, <i>alias</i> Clangunas, <i>alias</i> Clangunford, R. }	Ditto.	Ditto.	{ A parish: frequently written Clun-gunford.
Cold Weston, R. }	Ludlow.	Munslow.	A parish.
Corley, or Coreley, R. }	Burford.	Stottesden.	Ditto.
Culmington, R. }	Ludlow.	Munslow.	Ditto.
Deuxhill, <i>alias</i> Densil and Glazey, R. consolidated with Chatton. }	Stottesden.	Wenlock.	{ Ditto: Glazey and Chatton, mean Glazeley and Chetton.
Diddlebury, V.	Ludlow.	Munslow.	{ Ditto: anciently De Dulbury, or Dêlbury.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Dilton Priors, V.	Stottesden.	Wenlock.	A parish.
Dowlis, <i>alias</i> Dowles, R.	Burford.	Stottesden.	Ditto : usually called Dowles.
Easthope, R.	Wenlock.	Munslow.	A parish.
Eaton, V.	Ditto.	Wenlock.	Ditto.
Edgton and Shipton, Cur.	Clun.	Purslow.	{ Edgton is a parish : Shipton is meant for Sibdon ; but neither of them have any connexion with Edgton.
Ford church.	Pontsbury.	Ford.	A parish.
Glazey, R.	Stottesden.	Stottesden.	{ Ditto : meaning Glazeley, and inserted only under Deuxhill, in the Liber Regis.
Greete, R.	Burford.	Overs.	A parish.
Haberley, <i>alias</i> Habberley, R.	Pontsbury.	Ford.	Ditto.
Hanwood, R.	Ditto.	Shrewsbury.	Ditto.
Hawford, chap. to Bromfield.	Ludlow.	Munslow.	{ Ditto : though subject to the vicar of Bromfield.

Highley,

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Highley, <i>alias</i> Higley, V.	Stottesden.	Stottesden.	A parish : generally called Higley.
Holgate, R.	Wenlock.	Munslow.	A parish.
Hope Bowdler, R.	Ditto.	Ditto.	Ditto.
Hope Baggot, <i>alias</i> Bag- goteshop, R. }	Ludlow.	Stottesden.	Ditto : formerly Hope Baghard.
Hopesay, R.	Clun.	Purslow.	A parish.
Hopton castle, R.	Ditto.	Ditto.	Ditto.
Hopton Cresset, <i>alias</i> Upton Cresset, R. }	Stottesden.	Stottesden.	{ Ditto : called Upton Cresset ; and never written Hopton, C.
Hopton Wafers, R.	Burford.	Ditto.	A parish.
Hughley, R.	Wenlock.	Wenlock.	Ditto.
Jackfield, Cur.	Ditto.	Ditto.	{ Within the parish and township of Broseley.
Kinlet, V.	Stottesden.	Stottesden.	A parish.
Llanvair Waterdine, Cur.	Clun.	Clun.	Ditto.
Ledon, <i>alias</i> Leedham, }	Ditto.	Purslow.	Ditto : usually written Lydham.
<i>alias</i> Lyddam, R. }			

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>	<i>Main.</i>
Lidbury, <i>alias</i> Lidbury North.	Clun.	Purslow.	A parish.	
Long Staunton, V.	Wenlock.	Munslow.	Ditto.	
Linley, R.	Ditto.	Wenlock.	{ Ditto: mentioned under the article Broseley, in the Liber Regis, with which church this is holden.	
{ Longdon, in co. Salop and deanry of Salop, is a chap. to Pontsbury, in this diocese.	{ Pontsbury.	{ Ford.	{ This ch. is in the parish and deanry of Pontsbury: it is confounded with Long, or Longdon upon Tern. This is Longden.	
Ludlow, R.	Ludlow.	—	A parish.	
{ Lughton, chap.	{ Stottesden.	{ Stottesden.	{ Ditto: mentioned in the Liber Regis, under Chetton, with which R. and others, this church is consolidated. It is usually written Loaton, or Loughton.	

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Mainstone, <i>alias</i> Mind- town, R. }	Clun.	Clun.	{ A parish. Mainstone is separate and distinct from Mindtown; a parish and rectory, several miles distant, though the two are confounded together in the Liber Regis.
Madesey, V. }	Wenlock.	Wenlock.	
Minsterley, chap. to Westbury. }	Pontsbury.	Ford.	
Milbrace, <i>alias</i> Brace Meole, V. }	Pontsbury.	Shrewsbury.	{ A township in Westbury parish; but the chapel has no connexion with Westbury church. It is erroneously placed by BACON in the deanry of Stottesden.
Middleton Scriven, R. }	Stottesden.	Stottesden.	{ A parish: usually called Meole.
Moor, <i>alias</i> More, R. }	Clun.	Purslow.	{ A parish. Ditto: usually called More;

<i>Name of the Fabric.</i>	<i>Dairy.</i>	<i>Hundred.</i>	<i>Observations.</i>
Monk Hopton, Cur. chap. to Wenlock magna. }	Wenlock.	Wenlock.	A parish: no connexion with Wenlock. Nyend
Milston, R.	Burford.	Overs.	{ Ditto: mentioned only under Neen Solar, in the Liber Regis; with which church this is connected. It is usually written Milson, or Milson.
Morvield, Cur.	Stottesden.	Stottesden.	A parish.
Mounslow, alias Muns- low, R. }	Wenlock.	Munslow.	Ditto: usually written Munslow.
Neenton, R.	Stottesden.	Stottesden.	A parish.
NiendSavage, alias Neen Savage, V. }	Ditto.	Ditto.	Ditto: usually called Neen Savage.
Norbury, chap. to Lid- bury. }	Clun.	Purslow.	{ Ditto: though the church is con- nected with Lidbury.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>	<i>St.</i>
Nyend Salars, <i>alias</i> Neen Solars, &c. R. }	Burford.	Overs.	A parish : usually called Neen Solars.	
Oldbury, R. }	Stottesden.	Stottesden.	A parish.	
Onybury, R. }	Ludlow.	Munslow.	Ditto.	
Pontsbury, 1, 2, 3 ports. R. }	Pontsbury.	Ford.	Ditto.	
Powderbach, <i>alias</i> Pul- verbach, R. }	Ditto.	Cundover.	Ditto.	
Preen, Cur.	Wenlock.	Ditto.	Ditto.	
Rechop, chap. Clun and Wenlock. }	—	—	Meaning Ratlingshope, viz.	
Ruthlingshope church, <i>alias</i> Ratlingshope. }	Pontsbury.	Purslow.	A parish : pronounced Ratchop.	
Rushbury, R.	Wenlock.	Munslow.	A parish.	
St. Leonard, chap. to Ludlow. }	Ludlow.	—	Taken down.	
St. Margaret Clee, Cur.	Ditto.	Munslow.	{ A parish : usually called Clee, or, Clee St. Margaret.	

DIVISIONS.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
St. Tiracius, chap. <i>destruſta.</i>	Stottesden.	—	Its situation is not known.
Scrawardine, <i>alias</i> Shrawardine, R.	Pontsbury.	Pimhill.	{ A parish: usually written Shrawardine, and pronounced Shraden, or Shreden.
Scute, ch. <i>destruſta.</i>	Stottesden.	—	{ Its situation was in the township of Stutte, now Sit; and the township is now taken as part of the parish of Ratlingshope.
Shelve, R.	Pontsbury.	Chirbury.	A parish.
Shipton, chap. to Wenlock magna.	Wenlock.	Wenlock.	{ Ditto: it has not any connexion with Wenlock.
Silvington, R.	Ludlow.	Overs.	A parish.
Staunton Lacy, V.	Ditto.	Munslow.	Ditto.
Stottersden, <i>alias</i> Stottesden, V.	Sottesden.	Stottesden.	Ditto.
Stoke Say, V.	Ludlow.	Munslow.	Ditto.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Stoke St. Milburgh, V.	Ludlow.	Wenlock.	A parish.
Stow, V.	Clun.	Purslow.	Ditto.
Stretton, R.	Wenlock.	Munslow.	{ Ditto : frequently called Church Stretton.
Sudbury, <i>alias</i> Sidbury.	Stottesden.	Stottesden.	Ditto : called Sidbury.
Sutton, R.	Pontsbury.	{ Claimed by Shrews- bury and Wenlock. }	{ A parish.
Tashley, <i>alias</i> Tasley, R.	Stottesden.	Stottesden.	Ditto : called Tasley.
Tugford, R.	Wenlock.	Munslow.	A parish.
Wenlock magna, V.	Ditto.	Wenlock.	{ Ditto : usually called Wenlock ; sometimes Much Wenlock.
Wenlock parva, R.	Ditto.	Ditto.	Ditto : called Little Wenlock.
Wentnor, R.	Clun.	Purslow.	A parish.
Westbury, R. 2 parts.	Pontsbury.	Ford.	Ditto.
Whethill, <i>alias</i> Wheat- hill, R. }	Stottesden.	Stottesden.	Ditto.
Wistanstow, R.	Ludlow.	Munslow.	Ditto.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Wolstaston, <i>alias</i> Wol- laston, R. }	Wenlock.	Cundover.	{ A parish: usually written Woolsta- ston, and pronounced Woosason.
Willey, <i>alias</i> Wyllye, R.	Ditto.	Wenlock.	A parish.
Woolaston, chap. to Al- berbury. }	Pontsbury.	Ford.	{ A separate assessment and a dis- joined incumbency, by the op- eration of Queen ANNE's bounty.
Worting, <i>alias</i> Wor- then, R. }	Ditto.	Chirbury.	A parish: written Worthen.
Churches in this district, omitted in BACON's edition of the Liber Regis, which is the copy referred to in this List, and which, as being the last, it is presumed is the fullest.			
Broadstone, chap. to Munslow. }	Wenlock.	Munslow.	{ A separate assessment, but holden by the rector of Munslow, as such.
Burraston, chap. to Bur- ford. }	Burford.	Overs.	{ In the parish of Burford, and served by one of the rectors of Burford.
Corston.	Lugflow.	Munslow.	{ In Diddlebury parish, but uncon- nected with that church.

DIVISIONS.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Heath, chap. to Stoke St. Milburgh.	Ludlow.	Munslow.	{ A separate assessment, but holden by the vicar of Stoke St. Mil- burgh, as such.
Hopton Caingeford, or Hopton in the Hole.	Ditto.	Ditto.	
Middleton, chap. to Bit- terley.	Ditto.	Overs.	{ A separate assessment, but in Bit- terley parish, and served by the rector of Bitterley, as such.
Mindtown, R.	Clun.	Purslow.	A parish.
Nash, chap. to Burford.	Burford.	Overs.	{ In the parish of Burford, and served by one of the rectors of Burford.
Sibdon, Cur.	Clun.	Purslow.	A parish.
Whitton, chap. to Burford.	Burford.	Overs.	{ A separate assessment, but in the parish of Burford, and served by one of the rectors of Burford.

<i>Name of the Fabric.</i>	<i>Deanry.</i>
Westhope chap.	Ludlow.
Christ chap. in Aston.	Marchia.
Halston, Cur.	Ditto.
Kinnerly, <i>alias</i> Kinnerley, V.	Ditto.
Knocking, R.	Ditto.
Llanymowthy, <i>alias</i> Llanygemenech, R.	Ditto.
Llanyblodwell, <i>alias</i> Llanyblodwel, cum cap.	Ditto.
Moreton, R.	Ditto.

DIVISIONS.

ST. ASAPH DIOCESE.

<i>Hundred.</i>	<i>Oswestry.</i>
Munslow.	Ditto.
	Ditto.
	Ditto.
	Ditto.
	Ditto.
	Ditto.
	Ditto.

Observations.

{ A separate assessment, but in Did-
dlebury parish. It is not con-
nected with the vicarage of Did-
dlebury, or Dêlbury.

{ Not parochial. In the parish of Os-
westry.

{ The church is a peculiar ; the dis-
trict is extra-parochial.

A parish : written Kinnerley.

Ditto : pronounced Nuckin.

Ditto : it is written Llanymynech.

A parish.

<i>Name of the Fabric.</i>	<i>Deanry.</i>	<i>Hundred.</i>	<i>Observations.</i>
Moreton, cap. aforesaid.	Marchia.	Oswestry.	A separate assessment and incumbency.
Melverley.	Ditto.	Ditto.	A parish. The church is a perpetual curacy, united to the bishopric of St. Asaph.
Oswestry, V.	Ditto.	Ditto.	A parish.
St. Martin, V.	Ditto.	Ditto.	Ditto.
Sillatyn, R.	Ditto.	Ditto.	Ditto: usually written Sellarlyn.
Whittington, R.	Ditto.	Ditto.	A parish.

The number of churches, then, in this county, are as follows, viz. in the archdeaconry of Salop and diocese of Litchfield and Coventry, 109 churches, mentioned by BACON in his edition of the Liber Regis, from which we must deduct two, now destroyed, and add two not noticed therein, making the number 109.

In the archdeaconry of Stafford and diocese of Litchfield and Coventry, 5.

In the peculiar jurisdiction of Bridgnorth, 6.

In the archdeaconry and diocese of Worcester, 3.

In the archdeaconry of Salop and diocese of Hereford, there are 121 churches mentioned in BACON's edition of the Liber Regis, from which we must deduct one misnomer, and four that are dilapidated; and we must add eleven not mentioned, making the number of existing churches 127.

In the diocese of St. Asaph there are 12 churches, making, in the county of Salop, 262 churches, of which about 229 are parochial. Burfield, near Clun; Pinmore, in the hundred of Purslow; Horderley, near Edgton; Haghman demesne, near Shrewsbury; Farm on the Heath, near Knuckin; Posenall, near Broseley; Boscobel, near Donnington; and Woodhouse, near Cleobury Mortimer, are extra-parochial districts, most, if not all of which, had churches, that are now destroyed.

SECT. III.—CLIMATE.

THE climate, throughout this county, is so far altered by the irregularity of its soil and surface, that there is a considerable difference. The harvest on the eastern side, where the land is warm and flat, is frequently ripe about

a fortnight sooner than in the middle of the county, where the vales are extensive, but where the surface is less light, and the bottom often clayey; and hay and grain are both gathered earlier there than on the western side, where the vales are narrow, and the high lands frequent and extensive, although the ground is not in general so stiff, and lies for the most part on a semi-rock full of fissures. The easterly winds prevail in spring, and those from the west in autumn; but I believe the easterly winds are the most regular, those from the west generally blowing for a series of years (five or six perhaps) strong and frequent, and then for somewhat near a similar space less often and less violent. The same may be said of wet and dry seasons; but the periods of both appear to be much shorter*. I subjoin a list of days upon which there was no rain, and upon which there was some rain within the day and night, for six years,

* In the Philosophical Transactions for 1796, is a paper of Dr. HERSCHELL'S, "on the method of observing the changes that happen to the fixed stars; with some remarks on the stability of the light of our sun," &c. If it should be found that the brightness, and of course the power, of the sun is variable, it may account for the mild and severe winters; the dry or wet summers that have been known; and if those variations are proved to be periodical, astronomers may be able to shew the probability of the return of the respective seasons that have been experienced.

SECT. III.—CLIMATE.

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Janu-

	1796.		1797.		1798.		1799.		1800.		1801.	
	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.
January, -	15	16	17	14	16	15	18	13	9	22	16	15
February, -	14	15	25	3	22	6	21	14	14	8	20	20
March, -	23	8	19	12	19	12	13	20	11	12	19	19
April, -	19	11	9	21	20	10	21	5	25	20	10	10
May, -	12	19	10	21	22	9	21	7	24	14	14	17
June, -	19	11	6	24	20	10	10	16	14	20	20	10
July, -	5	26	17	14	2	29	6	23	8	10	10	21
August, -	24	7	13	18	19	12	10	21	10	24	7	7
September, -	20	10	10	20	9	21	15	15	20	7	23	23
October, -	18	13	23	8	11	20	9	11	20	11	20	20
November, -	18	12	21	9	9	21	14	7	23	12	18	18
December, -	14	17	14	17	15	16	13	18	13	9	22	22

I do not know of any rain-gauges that have been kept in this county. Mr. ATKIN, in his Tour, 1797, observes, that common pluviometers afford no sufficient proof of the quantity of rain that falls in a country, because the most partial showers are often the heaviest; so that an inch or two of rain may be gained in one spot, whilst none has been received at the distance of a mile, or less; but he conceives, that proper observations made at the Iron Bridge, near Coalbrook-dale, would ascertain

the superfluous water from about 1260 square miles. I have now before me an account of the height of the Severn upon each day, Sundays excepted, from October 17, 1789, to October 17, 1795, registered by the direction of Mr. WILLIAM REYNOLDS at Coal-port, and which will be inserted in the Chapter upon Canals.

I add an account of two thermometers, with which I have been favoured; the one noted near Cullumpton, in Devonshire, where the house stood high, and the other kept at Yoxall-lodge, in Staffordshire, the country being rather flat; in other respects, the points of exposure to the air were the same. The height of the thermometer in Devonshire above that in Staffordshire, at $9\frac{1}{2}$ A. M. was, one day with another, in

November, 1794,	-	5	degrees,
December, ditto,	-	$4\frac{3}{4}$	ditto,
January, 1795,	-	$8\frac{1}{5}$	ditto.
February, ditto,	-	$6\frac{2}{3}$	ditto.
March, ditto,	-	$6\frac{3}{4}$	ditto.
April, ditto,	-	10	ditto.
May, ditto,	-	$8\frac{1}{5}$	ditto.
June, ditto,	-	$9\frac{1}{2}$	ditto.

The thermometer in Devonshire was observed at $8\frac{1}{2}$ A. M. and $9\frac{1}{2}$ A. M. and there was frequently a variation of one, two, three, and four degrees, even five, and seven degrees, in that space of time in the same thermometer, generally standing higher at the later hours, but sometimes lower. As the climates of Staffordshire and Shropshire do not probably vary more from each other than they do in part from themselves, the counties being nearly parallel in latitude, and in many other circumstances, I thought this comparison between the thermometers mentioned, worth giving, and the more so, as I find there was little variation
in

in a thermometer kept at Ludlow, by Dr. BABINGTON, from that at Yoxall-lodge. The point of exposure was the same; and, upon an average of 53 days, the thermometer at Ludlow was not quite one-eighth of a degree higher than that at Yoxall-lodge*.

SECT. IV.—SOIL AND SURFACE.

SHROPSHIRE contains a great variety of soils and surface; and the former, in particular, have that variety so much intermingled, that any general account, especially such as has been incidentally given, in speaking of the climate, must be received with every allowance for exceptions, greater or less. And as the subject of this Section has been thus somewhat anticipated, so it will be difficult to treat of the soil and surface, without alluding to the minerals of the county. For a stone being only a hard mass of earth, and earth in powder being only an aggregate of minute stones, the compact and pulverized are best considered under the denomination of earths; but, in a popular work, it may be necessary to draw a broader line between them, and describe them, as much as may be,

* The air of Shropshire is generally very salubrious. The coal and iron-mines are no exception. These, perhaps, are in some degree injurious to the health of the miners, but by no means so much as many other mineral works, and like them, *per accidens*, not from any general properties of the air. If a stranger were to view this county, he would probably decide that Kinnersley, which is situated among the moor-lands, was more unhealthy than any other part of it. Yet in the Phil. Trans. No. 309, Anno 1707, by LOWTHORP and JONES, we have a very ingenious account of that parish, by the Rev. Mr. PLAXTON, then rector, in which he remarks the health and longevity of the inhabitants. Having resided there some time, as curate to the present Lord Bishop of LLANDAFF, I scruple not to affirm, that the same observations may be extended to the present time.—Rev. Mr. Rowley Middleton Scriven.

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in words of common acceptation. It would tend to simplify the communication of knowledge upon this subject, if the terms siliceous, argillaceous, and calcareous, were brought into general use, and strictly applied according to the predominating substance. These terms, however, though sufficiently familiar to all who have even inquired after mineralogy, are very unequally adopted into the English language. Argil, and argillaceous, are explained in JOHNSON'S Dictionary. The Latin word *calx* is also admitted, but not its derivative, calcareous; and *silex*, though equally entitled to a place with *calx*, is excluded, as well as siliceous. The word silicious, indeed, is found in JOHNSON'S Dictionary, as derived from cilicium, a particular kind of hair-cloth, and therefore has no reference to *silex*; and the same word is given by BAILLY, partly in the sense siliceous is now used. In an inquiry of this kind, vernacular words will be preferred, wherever they can be properly made use of; but it may not be amiss to shew some of the natural compositions usually intended by the designations specified above, since they are not fully explained but in books of science, as well as the easier means of ascertaining the application of them. Siliceous then, as commonly applied, comprehends flint, rock-chrysal, or quartz, clear and opaque, and also most of the precious stones. Siliceous substances are hard and insoluble in all acids but that of fluor spar: they strike fire with steel. In powder, they will not knead with water. Alkalis (sal sodæ, &c.) will unite with them in fire, and form a compound, which is soluble in water.

Argillaceous, comprehends clays, marls, boles, slates, or schistus, and mica. Argillaceous substances adhere to the tongue, or any wet and soft body, when solid, and are very kneadable when moist. They are soluble in acids, but alkalis act less upon them than upon siliceous earths.

Marls

Marls effervesce with acids when crude, but not when burnt. The goodness of marl depends upon the quantity of calcareous earth mixed with the clay. Bole is an indeterminate word, signifying some kind of clay. Slates slit into plates, or laminæ. They comprehend, with argillaceous earth, that which is siliceous and calcareous. Besides the roof-slate, or *schistus tegularis*, which contains more silex than argill (and which, therefore, according to the proposed definition, would belong to the siliceous earths), mineralogists add to this class the flag-stone, which, though it contains some silex, will not easily strike fire with steel, nor, in general, effervesce with acids. The same is observed of argillaceous grit, freestone, or sandstone, which is included also among the argillaceous earths. It may be cut easily in all directions, and exhales an earthy smell, when fresh broken and breathed upon. Mica has more silex than argill, and a metallic appearance. Its purest state is colourless; but it takes different colours from superfluous ingredients, principally from iron. It contains also magnesia.

Calcareous earth, or lime, predominates in most stones which are soft enough to be scratched with a knife; these are chalk, limestone, marble, spars, gypsum, or plaster of Paris. As lime is usually combined with fixed air, a small quantity of nitrous acid dropped upon calcareous earths, will cause a frothing, by the escape of the fixed air.

Granite is a compounded rock, consisting of felt-spar, quartz, and mica, and occasionally hornblende, steatites, garnet, or basaltes.

Having said thus much, with reference to terms it may be necessary to use in this and the following Section, I shall introduce in this place such parts of the original Report, as relate to the soil of this county. “We have nearly an equal quantity of wheat and turnip land,
the

the former rather predominant.”—“The N. E. side of the Severn is chiefly of a turnip soil, intermixed with a tolerable proportion of meadow and pasture. The banks of the Severn, which are often overflowed, produce hay in great plenty. On the S. W. side of the river Severn, from Alberbury, about eight miles wide, down to Cressage, the lands are chiefly pretty good, and contain pasture, wheat, and turnip land, but very variable; each sort lying in small quantities, and many farms containing each sort*. That from Cressage, about six miles wide, to Bridgnorth, and from thence to Cleobury and Ludlow, is chiefly mixt soil upon clay, and part thin. The remainder of the county, and lying more to the S. W. side, is very variable, mostly thin soil, some upon clay, other upon rock, extensive tracks of hills and waste: upon the whole, there is in this county all sorts of land, except chalk and flint.”

Though no part of this county can be called flat, generally speaking, yet the N. E. parts are comparatively so, and as contrasted with the hills on its southern and western borders, leading on to the Welsh mountains, and with the hills of Derbyshire and Staffordshire to the E. unite with the still more level county of Chester, in forming a great plain, or valley†. The Wrekin hill has been celebrated, from the circumstance of its detached situation, I should suppose, rather than its height. It rises in a flat part of the county. North of it, are excrescences of rock, and partial swells;

* “A small district of land round the present Wroxeter, is of a remarkably different appearance to that lying round it, and, as I am informed, produces better crops of barley, the best, perhaps, in the county. The very dark appearance of the land, and its superior fertility, are said to be owing to the charcoal found in it, from the combustion of the ancient Uriconium. May not this give a useful hint in agriculture?”—*Mr. William Reynolds.*

† Vide Aikin's Tour in North Wales and Shropshire, 1797, p. 187.

to the S.W. the hills are more frequent; and on the W. and S.W. borders, there is a succession of hill and dale. In the elegant and curious little tour just referred to, the height of the Wrekin is "reckoned 1200 feet;" but as no base is specified, no accurate idea is conveyed. The same work mentions the Longmynd, or Longmont, to "ascend gradually from the plain to the height of about 400 feet." As the inclosed lands rise for a considerable way before what is denominated the hill commences, the part of the plain from which this height is estimated, should have been mentioned. The base of the Longmynd at Woolstaston, is probably higher than the top of the Wrekin; and it is said that the Wrekin has been ascertained to rise no higher than the top of the glass door, at the east end of the parsonage-house in that village. How far this is strictly accurate, I do not know. From an actual level, taken in 1790, it was found that the fall, from the summit of the Wrekin to Ketley brook, was

897 feet, 7 inches.
And from thence to the water in the
river Severn, at Coal Port, with a } 192 0
six foot water,

In all, - 1089 7

There is a brook rises near Stretton, which is in a flat below the Longmynd, that runs several miles to the river Severn, and the Severn again runs for several miles to Coal Port. The rise of this spring is much lower than the village of Woolstaston, and therefore supports, to a certain degree, the belief of what is said to have been ascertained formerly. Perhaps some of the highest ground in this county is near Oswestry, which town is 157 feet higher than Shrewsbury; and Cern y bwch is 600 feet higher than Oswestry.

In

In the Staffordshire Report, the banks of the Severn, at Over Areley, are stated to be 60 feet in perpendicular height, "above the level of the tide of the Thames at Brentford." The counties of Stafford and Salop are joined, or divided, by the Severn, at Over Areley. The same Report mentions, that "the Wrekin and Clee hills of Shropshire, whose bases are upon the low lands near the Severn, have, nevertheless, their summits rising considerably above the hills in the south of Staffordshire;" and the summits of three of them are given at 650 feet, 750 feet, and 900 feet, above the level of the tide of the Thames at Brentford. Perhaps some further idea of the soil and surface may be given, by reviewing the different hundreds. In that of Oswestry, there is a considerable quantity both of deep loam and of gravelly soil. Some marl in that parish*; and in the parish of West Felton†, a large portion of black peaty bog, drained and draining. On the N. W. borders of the hundred, adjoining Denbighshire, the soil lies over strata of coal and limestone; and perhaps the summits of the hills in this district are the highest in the county, from their bases being upon very high ground. On the S. E. side, the soil becomes sandy. Pimhill hundred contains a mixture of boggy land, and of sand, lying over a red sandstone, with a greater proportion of sound wheat land. Bradford North has some low land, of a peaty nature, with some good meadow land; a considerable quantity of sand, and some gravelly soils. A manuscript account of this hundred says, its "most profitable subterranean earths, are clay for making of bricks; marl for improving of lands; and peat, or turf, for firing." "In the hundreds of Bradford South, and Brimstry, there

* Mr. ARTHUR DAVIES.

† Rev. Mr. LLOYD, of Aston.

is the least diversity ; it is generally a sandy loam*.” In the franchise of Wenlock, pale-coloured clays† prevail ; though there is some light land, and strata of coal, of ironstone, and of limestone, in great abundance, covered with a soil, reduced, perhaps, by the operation of the air upon the limestone. In the hundreds of Stottesden, Overs, and Munslow, there is much clay also, and considerable quantities of coal, ironstone and limestone, over which is a “ stony soil, of great variety. The land which lies over the limestone, or is mixed with it, or with the calcareous gravel which resembles it‡, is frequently the best in the neighbourhood. The next is soil lying over freestone : the upper surface of these rocks is frequently broken up by the plough, and becomes with the soil a rocky loam, fit for turnips and barley. Sometimes a slate marl lies under the surface ; which soil is esteemed, but it is not common§.” There are some sands lying over a red sandstone, particularly near Bridgnorth, and some clays, of a reddish colour, particularly near Ludlow, being almost the extremities of the two first-mentioned hundreds. The surface is irregular throughout the three ; and in the hundred

* EDW. HARRIES, Esq.

† “ This pale-coloured clay has the local and technical name of dye-earth ; and though, where it lies deep, it is of a blue colour, yet, when near the surface, becomes a pale yellow, from the oxydation of the iron it contains : it consists of 26 parts of calcareous earth, 58 ditto argil, 16 silex and iron. Might it not be used on the sandy lands on the banks of the river between Bridgnorth and Worcester, as a manure ? This dye-earth is stratified, and contains marine impressions. Ironstone and coal are never found in it, except a small stratum of coal sometimes near the top. It has never been worked through. In some places, limestone forms the sub-stratum to coal and ironstone ; which limestone itself lies upon what is here called black rock, having the appearance of basaltes, and in some instances it is columnar. This stratum has never been worked through.”—*Mr. William Reynolds.*

‡ Probably this is the limestone, not quite reduced. The calcareous gravel, or sand, of Ireland, is reckoned their best manure.

§ Rev. Mr. ROWLEY.

of Overs, the Titterstone Clee hill rises to a considerable height. Not far north of it, in the franchise of Wenlock, is the Brown Clee hill, a distinct mountain of some eminence; and from the south borders of Bradford South, through the same franchise, and denominated therefrom, runs a ridge of rock, to near the southern extremity of Munslow hundred: it is nearly perpendicular on its west side, and composed chiefly of limestone. In the hundred of Cundover, there is more flat land, but still great inequality of surface. The Lyth hill stands within it: the Caerdoc and Lawley, which are distinct hills of some height, and the extensive common of Longmynd, which is still higher, connects it to the S. and W. with the hundreds of Munslow and Purslow. In Cundover hundred, there is "a good deal of gravelly loam*," sand and clay, and oftentimes intermingled in very small beds; clayey soils lying over red sandstone, and others, with gravel or sand, under them. In the liberties of Shrewsbury, and hundred of Ford, there is also much pebbly loam: some reddish rock and clay, north of Shrewsbury, and some lighter coloured clays, lying over limestone, on the north borders of Ford hundred: its southern district is very much a deep clayey soil, with coal under, and becomes at last gravelly, rocky, and uneven. The hundred of Chirbury is still more uneven, but has plains of a deep light-coloured loam, or clay. Purslow and Clun are very uneven; but several of the hills are smooth, and fine sheep-walks, with a slaty rock under; in some places containing so much silex, as to form good roof-slate, and in others good building-stone; but most commonly the rock is argillaceous. There are some pale-coloured clays in these districts, and a considerable quantity of lighter soils, not so much gravelly perhaps, as mingled with ar-

* EDW. HARRIES, Esq.

gillaceous

gillaceous rock, and which becomes friable upon exposure to the air. In the vales; the meadow and pasture ground is very good.

It has been observed, that there is a continuation of red soil from Northamptonshire to Devonshire, which is uniformly very good. The red soils of this county are, in general, productive. Basaltes, or volcanic productions decayed, would form a reddish soil, which, I am told, is fruitful. I remark this, because mineralogists agree in stating the greatest component part of basaltes to be silex*. They agree that iron is another component part, though in what degree, has been differently asserted: the other substances in its composition, are clay, lime, or chalk, and magnesia. It is obvious to the agriculturist, that these may form rich soils; but the utility of silex and of iron will be less apparent to him; though, under the presumptions stated, he will do well to inquire after their value, in compounding manure. Since writing the above, I find Mr. AIKIN, in his Tour, which I had before looked into and referred to, observes, that the Stiperstones are "bordered, towards the plain of Salop, with banks of argillaceous schistus, and a black stone, containing argil, lime, and iron. Of this composition the lime forms so great a part, that upon the addition of water, after calcination, the stone breaks down into a coarse powder: this, in a country so far from lime, ought to be a valuable article; and yet the only use I have seen it put to, is mending the road between Minsterley and Wilmington."—Page 202.

* "Mr. DAVY has found that the epidermis, or outward rind of many vegetables, affords, by fusion with alkali, a considerable proportion of silex: those employed in his experiments, were the *arundo Saccharifera*, or sugar-cane; the *arundo Indica*, or bamboo; the bonnet-cane; *arundo Phragmitis*, or common English reed; the culms of wheat and grass, particularly the *anthoxanthum*, or *poa pratensis*."—M. Dugard.

SECT. V.—MINERALS.

THERE are mines of lead-ore, of a good quality, on the western side of this county, which have been very productive. The Bog-mine, in the parish of Wentnor, and the white-grit mine, in the parishes of Shelve and Worthen, adjoin the Stiperstones: they are high hills, with bare and ragged summits, resembling the ruins of walls and castles: they are a “granulated quartz, much harder than common sandstone, but apparently not stratified*.” The Bog-mine has been worked to the depth of 150 yards; a solid lump of pure ore of 800 lb. has been gotten up there: the vein is in some parts three feet thick, and generally bedded in white spar. One ton of this ore will run 15 cwt. of lead, besides slag. Dr. TOWNSON says, “these mines are in argillaceous schistus, and produce galena lead-ore†, sometimes spatous‡ lead-ore, and blende§.” The ores at the white-grit mine, are the common galena, and the steel-grained ores; sometimes the white spatous-ore, and considerable quantity of black-jack§. The ores from this mine are not smelted separately; they differ much in their product, and little experiment has been made to ascertain it. I have been informed, that they produce from 10 to 13 cwt. of lead, besides slags, from a ton of ore, and rarely more||.

* Dr. TOWNSON.

† This is lead mineralized by sulphur, and is the most common lead-ore. It is sometimes called potters’ lead-ore.

‡ This term is not in NICHOLSON’S Dictionary, or in the 8vo. edit. of KIRWAN: it means lead-ore crystallized in the form of spar.

§ Traacts and Observations in Nat. Hist. &c. p. 184.

|| Mr. PENNANT, in his Welsh Tour, vol. i. p. 447, says, “the lamellated, or common kind of lead-ore, usually named potters’-ore, yields from 14 to 16½ cwt. of lead from 20 cwt. of the ore, but the last produce is rare.”

At

At Snailbach, in the neighbourhood of the same hills, but nearer Shrewsbury, lead has been gotten for a long time. "The vein was in some parts four yards wide. The vein-stones are heavy spar, mixt with calcareous spar and quartz. The ore here is the common galena and the steel-grained, and sometimes the white spatous-ore*." It has been "worked to the depth of 180 yards. The matrix of the ore is crystallized quartz and carbonate of lime. The ore is, 1. Sulphuret of lead, both galena and steel-ore, which latter contains silver; 2. Carbonate of lead, crystallized; 3. Red-lead ore †; 4. Blende, or black-jack ‡." Lead-ore has been met with in many other places in this part of the county. As far west as Llanymynach, lead is found in small quantities, and copper, which the Romans are supposed to have worked to a great extent. Tools, judged to be Roman, have been found in these mines, and some of them are preserved in the library of Shrewsbury free-school. In this hill, the lead is met with in bellies of ore, that is, a small string leads often to a body of ore about four or five yards in diameter, but from which there is no vein issues, that may lead the miner to the other bodies of ore remaining in the hill. Calamine also is here met with. The rock at Pimhill is strongly tinged with copper. Symptoms, both of copper and lead, appear also in the Cardington hills, many miles S. E. of the spot we are speaking of, and not very far south of the centre of the county. "Lead is also found at Shipton, in the road

* Dr. TOWNSON'S Tracts, &c. p. 183.

† Mr. AIKIN says this ore was discovered in these mines by RASPE, a German. Mr. NICHOLSON, in his Chemical Dictionary, 1795, remarks, that this ore had not then been found, except at Catharineburgh, in Siberia. I do not know that these two red-lead ores have been ascertained to be precisely the same, or that any difference between them has been discovered.

‡ Vide AIKIN'S Tour, p. 203.

from Wenlock to Ludlow, but never yet in sufficient quantities to reward the adventurers*.” Full as far north of the centre, it is reported, in a MS. history of Bradford North (A. D. 1740), that “HENRY TENISON, Esq. got copper-ore in his estate about Red Castle; but it lay so deep, that it turned to little account;” and I believe we may apply the following paragraph from the same MS. to many adventures in mining in this and other counties; for the author proceeds to say, that “the Rev. Mr. SNELSON expected to find this hidden treasure at Weston, but had his labour for his pains, and his expence for his trouble.”

Coal of an excellent quality is gotten on the eastern side of the county, particularly in the parishes of Wellington, Lilleshall, Wrockwardine, Wombridge†, Stirchley, Dawley, Little Wenlock, Madeley, Barrow, Benthall, and Broseley, and which “promise a lasting and plentiful supply‡ for the great iron manufactures in that neighbourhood, for domestic use, and as an export to other counties by the river Severn, on or near the sides of which they lie.”—South of these works, and on the other side of Bridgenorth from them, coal appears again. It may be found in most parts of the hundred of Stottesden; but the roads in general are an obstruction to its being removed. South again of these, and of the Clee hills, are very valu-

* Mr. WILLIAM REYNOLDS.

† In this parish, Mr. W. REYNOLDS, about ten years ago, put in practice an idea he had conceived some years before, of uncovering the strata of ironstone and coal which lay near the surface, so as to get the whole of the strata of ironstone and coal, clay, &c. to a certain depth; when, in the old method, large quantities, both of ironstone and coal, were unavoidably lost, and which never afterwards would be of any use to the proprietor or occupier of the mines. This method is now followed in other works, where the strata lie sufficiently near the surface.

‡ EDW. HARRIES, Esq.

able coal-works, in some of which the canal, or kennel coal, is found. Mr. PENNANT, in his Voyage to the Hebrides, remarks, that the name is probably *candle-coal*, from giving a light that supersedes, in poorer houses, the use of candles; and the Bishop of LLANDAFF, in his Chemical Essays, has the same idea, supported by the circumstance, that in the northern counties candles are called cannels. The S.W. parts of this county have not yet been proved to contain coal; and the inhabitants purchase, at a great expence of land-carriage, coal from the Clee hills, or from collieries in the west parts of Shropshire: such there are W. and S.W. of Shrewsbury. Again, on the W. and N.W. borders of the county, coal of a good quality is gotten. Out of fifteen hundreds, the following large proportion of ten are known to produce coal, viz. Oswestry, Ford, Shrewsbury, Bradford South, Brimstry, Wenlock, Cundover, Munslow, Overs, and Stottesden. Mr. WILLIAM REYNOLDS has favoured me with the following lists of strata in five different collieries in the eastern district. His name will add an interest and value to the communication, in the opinion of all those who have the pleasure of knowing him.

STRATA IN LIGHTMOOR WIMSEY PIT.

	Yds.	Ft.	In.
A good loam, and mixed soil,	6	0	0
Pale-blue clunch,	16	0	0
Dark-grey rock, not very strong,	5	0	0
Sky-blue clunch,	2	1	6
Three stinking coals, divided by pale-blue earth, two inches between each,	1	1	6
Strong clod mingled, pale-blue and red,	16	0	0
Brown rock, called the stinking-coal rock,	7	1	0
		Three	

	Yds.	Ft.	In.
Three stinking coals, divided by pale-blue earth, four or five inches between each, }	3	0	0
Blue clunch, - - -	4	2	0
Red clunch, pale, - - -	4	0	0
Rough rock, so called from being full of dark-brown hard pebbles and ironstone, }	7	0	0
Bind, a pale-blue clod, - - -	14	0	0
Stone-clod, ditto, in which lies a bed of ironstone, called ballstone, }	5	0	0
Black slate, - - -	0	1	0
Coal, called top-coal, exceeding good fuel, - - -	1	1	0
Top-coal tough, a dark-blue earth, and a very heaving measure, }	0	1	0
Coal, called the foot-coal, - - -	0	1	0
Slumbs, black-slaty earth, and a heaving measure, - - - }	2	0	0
Coal, called the three-quarter coal, - - -	0	2	0
Rotch, dark-grey hard rock, - - -	0	2	0
Coal, called the double-coal, - - -	1	0	0
Dark-grey clod; will fire from its own nature, - - -	2	0	0
Coal, called yard-coal, - - -	1	0	0
Black (a black slate-coal, and rock, mixed), - - -	2	1	6
Clod, a pale white, in which lies a bed of ironstone, called - - - }	2	0	0
Flan, a dark slate, - - -	0	0	6
Coal, called upper flint-coal, - - -	1	1	6
Upper flint, a dark-grey rock, - - -	7	1	0
Pinny-measure; a pale-blue clod, in which lies a large quantity of small balls of ironstone, called pennystone, - - - }	5	1	6
Stinking-coals; three beds, divided by three or four inches of dark-brown earth, }	0	1	9
		Pale-	

	Yds.	Ft.	In.
Pale-blue clod,	2	0	0
Coal, called the silk-coal,	0	1	2
Clunch, of a dark blue,	5	1	6
Coal, called the silk-coal, divided by a few inches of grey earth,	0	1	6
Clunch of a dark blue, with coal in the middle, seventeen inches thick: the coal is called silk-coal,	3	1	10
Coal, called the two-foot coal (feet),	0	2	0
Lintseed-earth (dark brown—a very shuttle measure),	0	1	2
A black slate,	0	0	6
Coal, called the best coal,	0	1	6
Black-bass, or slate,	0	0	6
Coal, called the middle coal,	0	2	9
Dark-brown stony clod,	1	0	6
Coal, called clod-coal,	0	1	10
Clod, of a pale blue,	1	1	8
Coal, called little flint-coal,	0	2	2
Little flint; a rock of a dark grey, mixed with pebbles and ironstone,	16	0	0
	154	1	4

Die-earth; a pale-blue hard clunch: this measure continues the same, to the depth of more than } 100 0 0

So far I have proved on the rise of the work. How much deeper it is, we know not.

STRATA AT WOMBRIDGE, AT THE PIT NEXT THE
ENGINE.

	Yds.	Ft.	In.
Earth and catbrain, of various thicknesses,	4	0	0
Top-rock, - - -	7	0	0
Bind-bass, - - -	0	1	6
Bind, - - -	4	0	0
Ballstone and earth, - - -	2	2	0
Short-earth, - - -	3	0	0
Top-coal bass, - - -	0	1	0
Top-coal, - - -	1	2	0
Top-coal and poundstone, - - -	0	1	0
Slums, - - -	0	1	6
Foot-coal, - - -	0	1	0
Three-quarter coal, - - -	0	2	3
Rock, - - -	1	1	4
Double-coal, - - -	2	0	0
Double-coal poundstone, - - -	0	1	6
Yellow-stone, earth and stone, - - -	2	0	0
Yard-coal, - - -	1	0	0
Yard-coal poundstone, - - -	0	1	0
Quiest-neck, - - -	0	1	0
Blue-flatstone, earth and stone, - - -	1	1	6
Pitcher-basses, - - -	1	1	6
Flint-coal rock, - - -	3	2	0
Flint-coal roof, - - -	3	0	0
Flint-coal, - - -	1	1	6
	43	2	7

STRATA

STRATA IN MADELEY-FIELD.

	Yds.	Ft.	In.
Suppose the soil, clay, or sand, may be, in } in general, about - - -	8	0	0
Stinking-coal rock, - - -	7	0	0
Ditto clod, blueish-grey, - - -	1	0	0
First stinking-coal, - - -	0	2	0
A tough pricking, - - -	0	0	4
Second stinking-coal, - - -	0	0	4
A strong clod, darker than the first, - - -	3	0	0
Freestone-rock, containing plum-puddingstone, - - -	7	0	0
A clod, much like the first, - - -	1	0	0
Top-coal, - - -	1	0	0
Basses, or blacks, - - -	1	2	0
Blackstone, earth and ironstone, - - -	0	1	0
Bottom-coal, - - -	1	0	0
Great-flint and ironstone, - - -	5	1	6
Prenny-measure and ditto, - - -	2	0	0
Third stinking-coal, - - -	0	1	0
Pricking, - - -	0	0	2
Upper clunches, - - -	3	0	0
Sill-coal, or big coal, - - -	0	0	7
Two-foot rock, - - -	6	0	0
Two-foot coal, - - -	0	1	6
Lower clunches, - - -	2	1	6
Little ganey-coal, - - -	0	1	0
Pricking, - - -	0	1	0
Ganey-stone, - - -	0	0	9
Ganey-coal, - - -	0	1	6
A clunch, - - -	2	0	0
Best coal, - - -	1	0	0
A bass,			

	Yds.	Ft.	In.
A bass, - - - - -	0	0	4
Middle-coal, or randles, - - - - -	0	2	0
A clod, - - - - -	0	0	6
Clod-coal, - - - - -	0	1	8
Pricking, - - - - -	0	0	6
Clod-coal, poundstone, - - - - -	1	1	0
The hard-man, with little flint-coal—iron- stone in it, - - - - -	0	2	6
Little flint-coal, - - - - -	0	2	0
Little flint-coal, rock with crawstone in it, and its measure a little coal for a pricking, half inch thick, - - - - -	7	0	0
	67	2	8

Underneath is a clayey earth, called die-earth, of an unknown thickness.

N.B. This measure is found to consist of stratifications, and appears to have been lifted up like the upper measures; and though this circumstance is not perceived at first, or when it is exposed to the day, yet, on sinking some yards into it, it is very perceptible.

STRATA IN SLANEYS DAWLEY DEEP WORK,

	Yds.	Ft.	In.
Soil and loose rock, - - - - -	3	2	0
Yellow, blue, and red stuff, with stones, - - - - -	5	1	6
White clunch, with pieces of white rock, - - - - -	10	0	0
Grey rock, - - - - -	1	1	6
Yellow cloddy stuff, - - - - -	5	1	6
White clunch, or rocky stuff, - - - - -	3	0	0
Grey rock, - - - - -	3	2	5
White clunchy stuff, - - - - -	1	1	6
			White

	Yds.	Ft.	In.
White rock, - - -	0	1	6
Pitchy-rock, - - -	14	2	0
Bass and coal, - - -	0	0	6
Blue tough stuff, - - -	0	1	0
Coal, - - -	0	1	5
Blue clunchy stuff, - - -	6	0	5
Red ditto ditto, - - -	2	0	0
Blue ditto ditto, - - -	1	0	8
Red ditto ditto, - - -	2	2	0
Blue ditto ditto, - - -	9	2	8
Coal, - - -	0	0	6
Blue clunch, - - -	0	2	6
Fleece of white rock (casing), - - -	0	0	6
Blue clunchy hard stuff, - - -	8	1	8
Coal, - - -	0	2	0
Blue clunchy stiff hard stuff, - - -	4	1	1
Red ditto, very strong, - - -	2	1	9
Hard (very hard white rock), - - -	0	1	9
Mingled red and white strong stuff, - - -	2	2	1
Very hard white rock, - - -	1	1	10
Rock, red and white, hard, - - -	3	2	11
Ditto, very hard and white, with spar, - - -	0	0	6
Hard white rock, - - -	4	1	0
Yellowish stuff, called the callimanacha earth, - - -	5	0	5
White rock, - - -	0	1	7
Mingled red and white, and greyish stuff, - - -	3	2	9
Bass, - - -	0	2	0
Stone-clod, - - -	0	2	6
Ironstone, supposed the logs, - - -	0	0	5
Clod, - - -	0	1	8
Coal, mixed with rock, - - -	0	2	0
Flint-coal, or bottom-coal, - - -	0	1	3
	116	0	3
		We	

We see then, that in the first-mentioned coal-pit, no coal was found within much less than 30 yards of the surface, and that then three small layers of bad coal only were gotten; that after sinking near 24 yards deeper, three other layers of the same coal were procured, but that the first vein of good coal lay 92 yards beneath the surface; that this vein was 4 feet thick; that none of the veins appear to have been more than 5 feet thick; and that in 154 yards, and more, regularly worked, or above 254, taking in the whole experiment, 13 yards 2 feet of coal were found. In the second pit specified, the coal appears to have been met with in little more than 21 yards from the surface. One of the veins proved 6 feet thick; and in sinking somewhat less than 44 yards, above 7 yards thickness of coal was discovered. In the third pit specified, the sulphureous, or bad coal, was met with in 16 yards from the surface, and good coal in less than 28 yards; no vein exceeded 3 feet; and the aggregate in almost 68 yards, was not quite 9 yards of coal. In the fourth pit specified, the first unmixed coal was 50 yards from the surface; and in sinking above 116 yards, it does not appear that here was any vein thicker than 2 feet; and the aggregate of unmixed coal measured only 5 feet 2 inches in thickness.

Dr. TOWNSON, in his Tracts, p. 166, has given the strata of two other pits in this district, and has added to the colliers' names for the different measures, his own definition of each. He observes, that "annually about 260,000 tons of coal are raised in this district," a very large proportion of which are consumed in the adjacent iron-works, I presume; for I have understood, that in the Ketley iron-works they use at least 6 ton of coal out of every 7 they raise. What I have called the collieries of the eastern district, comprehend pits on both sides the river Severn. The veins of coal in this district, are equal in thickness, I believe,

believe, to most in this county, but very inferior to those of the Staffordshire works, from 15 to 20 miles east of these, where, I have been told, there is a bed of coal measuring 13 yards, or more. The next coal-works to be mentioned, are those of the Clee-hill, from 20 to 30 miles south of those we have been describing*. Collieries indeed are now working at Billingsley, connecting them, in some measure, by their situation; and again, west of the eastern coal district, pits have been lately sunk with success. I am indebted to Dr. TOWNSON'S Tracts, before quoted, for the following lists of the strata in two of the Clee-hill collieries.

Strata found in sinking the deep pit in the southern part of the hill:

	Yds.	Ft.
Earth and sandstone-rock, - - -	10	1 $\frac{1}{2}$
Basalt, called here Jewstone, - - -	64	1 $\frac{1}{2}$
Sandstone-rock, bind, clunch, and coal roof: dry } clays, - - - - -	23	0
The great coal, - - - - -	2	0
Coal-bottom and ironstone-roof: these are dry clays, -	1	1
Ironstone-measure: a dry clay, - - - - -	1	0 $\frac{1}{2}$
Three-quarter coal, - - - - -	0	1 $\frac{1}{2}$
Clumper: hard dry clay, - - - - -	2	0
Smith's coal, - - - - -	1	2
The smith coal-bottom: dry clay, down to the } four feet coal-rock, - - - - -	0	2
	107	1

* A coal-pit is now (1802) worked on the summit of the Brown Clee-hill, within the encampment.

The strata in the water-pit, which is about a quarter of a mile to the north-east of the preceding, are:

	Yds.	Ft.
Basalt, here called Jewstone, - -	48	0
Brown and white clunch: dry clay, -	6	0
Red rock: a yellowish sandstone, -	9	0
Bind and clunch: dry clays, - -	9	0
Pinney ironstone measure: dry clay, -	1	0
Clunch: dry clay, - -	3	0
Brown rock: a yellowish sandstone, -	6	0
Tuff (plastic clay), and sand, -	1	0
Black-bind: a dry clay, - -	4	0
Rock: very coarse sandstone, - -	5	0
Strong clay, - -	1	0
Horse-flesh earth: a variegated red and white marl,	6	0
Grey rock: sandstone, - -	6	0
Bind: a dry clay, - -	2	0
Great coal-rock: whitish sandstone, -	6	0
Coal-roof: dry clay, - -	3	0
The great coal, - -	2	0
Coal-bottom pounsin*: a dry clay, -	1	0
Ironstone-roof and measure: a dry clay, -	1	1
Three-quarter coal, and bass, -	0	2
Clumper: a hard dry clay, - -	3	1
Smith-coal, and clod in it, - -	1	2
Strong clunch: dry clay, - -	2	0
Flan and bass: hard dry clay, - -	0	2
Strong clunch: dry clay, - -	3	0
Four-foot coal, and bass, - -	1	0

* "Poundstone is probably meant by this word, as it is the earth, or stone, lying immediately under the coal, and which, when it is a rock, occasions the colliers to pound, or break their tools."—*Mr. William Reynolds.*

Strong

	Yds.	Ft.
Strong brown clunch: dry clay, -	1	0
Sunk into the four-foot coal-rock, -	3	1
	137	0

In the first of these Clee-hill pits then, we find the first strata of coal 98 yards below the surface; that the thickest vein is 6 feet; and that the aggregate of coal in 107 yards 1 foot, is 12 feet 6 inches. In the second pit, they must sink 116 yards before coal is found, the vein of which is also 6 feet thick; and the other veins, which are not pure coal, measure in the aggregate 10 feet; so that, in 137 yards, there are only 16 feet of coals, and of these, only six that are unmixed. Of the collieries in the W. and N. W. extremity of the county, the most considerable were those of Llwyn y Main and Trevor Claudd, which appear to be nearly exhausted; but other collieries have been lately opened between Oswestry and Chirk-bridge. The colliers describe these veins as diverging rays from an ideal centre, marked here by the part of the horizon where the sun appears from eight to ten o'clock in the morning. To this ideal centre the Ruabon collieries dip from N. W. to E. on the north side the Dee. The Chirk collieries, from W. to E. on the south side the Dee, and between that river and the Ceiriog; and again, the Pen y bryn collieries, lately begun to be worked, and the only work of the three in Shropshire, dips from W. to E. on the south side the Ceiriog. These veins range up against a ridge of lime-rocks, that run from N. to S. W. Those near Ruabon, as well as those on the south side the Ceiriog, are a strong bituminous coal, with the baking quality of the Newcastle coal, yielding a strong heat, but no bad smell, except the top-coal. The veins between the Dee and
Ceiriog,

Ceiriog, are a lighter coal, burning more quickly, and the ashes are white. This difference is supposed, by the colliers, to arise from the less weight of water that is over these veins. Mr. ARTHUR DAVIES, of Oswestry, has favoured me with the following list of the strata in the engine-pit at Chirk-bank coal-work, and which is the deepest pit he has sunk.

	Yds.	Ft.	In.
Gravel, - - - - -	24	0	0
Red clay, - - - - -	4	0	0
Delph, - - - - -	2	0	0
Fine sandstone, - - - - -	8	0	0
Tender coal, - - - - -	0	1	6
Clunch, - - - - -	0	1	6
Blue-bind, - - - - -	4	0	0
Freestone-rock, - - - - -	15	0	0
Coal, - - - - -	1	1	0
Clunch and ironstone, - - - - -	2	0	0
Blue-bind, with ironstone, - - - - -	14	0	0
Black shale, - - - - -	2	0	0
Coal, - - - - -	2	0	0
Grey rock and clunch, - - - - -	1	1	6
Coal, - - - - -	2	1	0
Clunch, - - - - -	1	0	0
Dark-grey rock, - - - - -	5	0	0
Blue-bind, - - - - -	9	0	0
Grey stone, mixed with ironstone, - - - - -	3	0	0
Coal, - - - - -	0	2	9
	102	0	3

We find then, in this pit, a vein of 7 feet thick, 1 foot thicker than any mentioned in the other Shropshire coal-works; and that in little more than 102 yards, 7 yards and 3 inches

3 inches of coal are met with. Having given these specimens of the strata in the collieries on the E. S. and N. W. borders of the county, I shall conclude with those in one of the deepest pits at Welbatch, the works there being the most considerable of what may be called the central collieries of this county.

	Yds.	Ft.	In.
Clay,	2	0	0
Blue clod,	10	0	0
Brown rock,	3	0	0
Red measures,	9	0	0
Grey rock,	1	0	0
Red measures,	2	0	0
Red clod,	2	0	0
Coal,	0	0	9
Blue clunch,	2	0	0
Dark-brown rock,	2	0	0
Grey rock,	2	0	0
Light-blue clod,	4	0	0
Coal,	0	1	0
Blue clunch,	2	0	0
Grey rock,	1	1	6
Blue clod,	9	0	0
Coal,	0	2	0
	52	2	3

We see then, that in near 53 yards there is only 1 yard 9 inches of coal, and no vein thicker than 2 feet; but, probably, there are veins of more substance, whenever it shall be thought expedient to sink these pits deeper.

This county is also well supplied with lime, and in general the limestone is at no great distance from coal. It differs in colour, and in the quantity of flour, or powder,

that it yields, when slacked. The lime-works at Lilleshal are very considerable. There is plenty of limestone near the Wrekin and Coalbrook-dale, and it extends from Benthall-edge (on the opposite side the Severn, to Coalbrook-dale), near to Wenlock, called there Wenlock-edge; and so, S.W. pointing towards Ludlow, it forms a ridge of rock, somewhat perpendicular on the N.W. side. It is worked in various parts, and yields a large quantity of white powder, though these properties degenerate as it extends south, till it becomes too argillaceous to be very valuable. Lime is found also in the Clee-hills; in a small degree in the S.W. district; in many places south of Shrewsbury, but of a brown colour, and less pulverizing quality. West of Shrewsbury, it is gotten in considerable quantities, in the parishes of Cardiston and Alberbury; and at Porth y wain and Llanymynach, on the west confines, is a hill of limestone of an excellent quality. At the east end of the Wrekin, and at some other lime-works, is a red lime, that will set very hard in water. Mr. SMEATON discovered that lime, with a certain proportion of clay and iron, did best under water. And the colour of the lime here spoken of, indicates its having these component parts. Much of the limestone of this county is near the surface; but near Leebotwood, about nine miles south of Shrewsbury, it "is covered by 20 yards of argillaceous strata*." "Limestone is also found near Caughley, under 20 yards of argillaceous and sandstone strata. *It is a yard thick, but not worked*†." Ironstone is found in the neighbourhood of Wellington, Coalbrook-dale, and Broseley. In and near the Clee-hills, it is also met with; and Dr. TOWNSON has taken notice of a species of ironstone in the Llwy-

* Dr. TOWNSON'S Essays, p. 187.

† Mr. WILLIAM REYNOLDS.

ny main colliery, near Oswestry, which he ascertained to be a mixture of spatous iron-ore and the common argillaceous ironstone. He observes, that the best iron and steel, viz. those of Styria, are made of spatous iron-ore; and therefore he judges that this may be found very valuable. Mr. WILLIAM REYNOLDS informs me, there is a very good stratum of spatous iron-ore found at Billingsley, but that it is not worked.

This county is also well supplied with building-stone; and its north district, which could be but little noticed for the subterraneous treasures we have been speaking of, stands pre-eminent for its quarry at Grinsell, seven miles north of Shrewsbury, where is a white sandstone, superior, perhaps, to any in the kingdom: the top rock lies in thin strata; the bed is 20 yards thick. There is plenty also of good red sandstone in the neighbourhood. The same may be said of the east side of the county; and near Bridgnorth, beds of red sandstone are found under white sandstone; and again, beds of white sandstone under the red. This appears a singular division and alteration of the cements. Iron particles give their colour to the red stone; and it is on this account, probably, that the weather has more influence on it than on the white-stone, the iron absorbing so much air as to lose its tenacious quality.

Farther south, sandstone prevails; and Dr. TOWNSON found at Orton-bank, a stratum of the Bath and Portland-stone, between strata of common limestone.

In the west district is a siliceous grit, hard to work, but very good to build with; but the general stone is argillaceous. That nearest the surface is but in part indurated, and becomes friable, under a slight pressure, when exposed to the vicissitudes of weather. Very good stone-slates, for covering roofs, are met with in the parish of

Bettus, on the S.W. confines of the county. And there is very good flag-stone in Corndon-hill, west of Bishop's-castle. In Swinney-mountain, near Oswestry, is a superior white sandstone, which works very well. Bowden-quarry, in the hundred of Munslow, contains also very good white sandstone; and at Soudley, in the parish of Eaton, and franchises of Wenlock, is a very good stone-flag for floors. This brings us near some hills which have not hitherto been much mentioned, viz. the Lawley, and Caerdoc, or Caer Caradoc.

South of the Lawley, is a ridge of useful coarse grit, or sandstone, of a yellowish white. But the Lawley is in part formed of a kind of granite, probably what mineralogists call secondary granite; but a greater part of the hill is composed of what forms the basis of what has been lately called toadstone, which, though wanting no explanation to a mineralogist, it may be well to give some popular idea to, by saying, it is entirely distinct from sandstone, limestone, or slate, and approaches the nearest in outward appearance to a basaltic rock, though probably very different in reality. The stone of the Caerdoc is chert, and granulated quartz; and in some places the toadstone appears, which having, in part, lost its glands, becomes cellular, and which may have given rise to the opinion of its being lava. The Ponsert-hill partakes of the nature of the Caerdoc and Lawley. I am indebted to a conversation with Dr. TOWNSON, for whatever is scientific in the account of these two hills; and a more minute account of them, and of other hills in this county, will be found in his volume of Tracts, before quoted. Mr. WILLIAM REYNOLDS informs me, that a part of the Caerdoc, towards the N.W. end, contains the pistachio green actinolite of Dr. TOWNSON, imbedded in what he calls a grey whack, and which
actinolite,

actinolite, on examination, has been found to contain so much iron, as to become strongly magnetic on exposure to heat, and the containing bed forms a black glass. Mr. AIKIN, in his Tour, p. 201, mentions the Longmount to be composed, so far as his observations extended, of a very shivery kind of schistus. It certainly presents that appearance on its east side, near the Strettons. But Dr. TOWNSON says, the nature of the rock, in general, is "compound sandstone; *i. e.* a stone which, instead of being formed of grains of quartz, is formed of grains, or very minute fragments, of other kinds of stone. These, here, seem to be of an argillaceous and jaspideous nature, mixed with a few grains of feldspar*."

The Wrekin is chiefly composed, I believe, of a reddish chert. Mr. WILLIAM REYNOLDS informs me, that prodigious masses of granulated quartz are imbedded in it, and much feldspar, and that a quantity of red mica is also found at the S.W. end of the hill. The Stiperstones are a granulated quartz; and they are perhaps the highest ground in Shropshire, except the hills near Oswestry, and those are a coarse-grained sandstone. Near the Cardington hills, Mr. WILLIAM REYNOLDS found a quartz †, that he thought as good, or better than the Carreg china of Caernarvonshire, which is exported for the use of the English potteries. He has since found a granulated quartz, in the Wrekin and Arcall hills, which seems likely to answer the same purpose for the pottery, and which has the convenience of being near established potteries, and a navigable river. With the same advantages, that near Cardington would be very valuable, as there is a steatitic clay there, which was long used in the Caughley china-

* Tracts, &c. p. 186.

† The first species, second family of the siliceous genus of KIRWAN.

works, at a considerable expense of land-carriage. At Pitchford, about seven miles S. E. of Shrewsbury, is a red sandstone, approaching the surface in many places, and from which exudes a mineral pitch. The same substance is gathered from a well in the neighbourhood, and in some quantity in warm weather; but in winter, very little is seen floating on the water. From the rock is extracted an oil, called BETTON's British oil. The experiment was first tried at Broseley (at a place still called the Pitch-yard), about fourscore years ago, or more, and an account of which was published in No. 228 of the Philosophical Transactions: from near that period, the Pitchford rock has been gotten for that purpose, and sometimes 20 ton, or more, used in a year, for which the manufacturer paid 5s. per ton. It was carried from thence to Shrewsbury, where the oil was procured by distillation; but the process is kept secret; a patent was obtained for the discovery by the late Mr. BETTON; but his right to a patent was disallowed, by the decision of a court of law, some time after. The oil was used only medicinally, and has probably many of the properties of what is called FRIAR's balsam, and in quality and appearance has a near resemblance to oil of amber, and is often sold as such. When the manufacture was carried on in its greatest extent, I have understood that a considerable quantity of the oil was exported, and principally to Germany. It is still to be bought in Shrewsbury, from the preparer. It is also from a rock of red sandstone that the fossil tar-spring near Coalbrook-dale, issues. Mr. AIKIN relates in his book, before quoted, p. 194, that this "spring was cut into, by driving a level in search of coal; that the quantity that issued at first, was to the amount of three or four barrels per day; but that, at present (1797), there seldom flowed

flowed more than half a barrel in the same period." And in 1799, Dr. TOWNSON states the produce at only 30 gallons per week (now, 1802, it is about half that quantity), though, he imagines, other fissures filled with the same substance, may be found, if there was a greater demand for it. The oil distilled from this tar, exactly resembles BETTON's British oil, and is used as a solvent for Caoutchouc (commonly known by the name of elastic-gum, or Indian-rubber), which is now used as a varnish for cloth, and is particularly applicable to balloons. Near Jackfield, on the south side the river Severn, is carried on the manufacture of coal-tar, for which Lord DUNDONALD formerly obtained a patent. In coaking the coal, which is here done in close vessels, they obtain the volatile products which are raised in vapour by the heat of the operation of coaking, and condensed in a chamber covered with lead plates, over which water is constantly running. These products are a water and an oil; the former of which contains a portion of volatile alkali, and the latter is boiled down to the consistence of tar or pitch. The oil which is caught during the boiling down, is used as a solvent for resin, and forms an excellent varnish for ships, or any wood-work exposed to weather. The MS. account of Bradford North, mentions a salt-spring at Smeithmore, in the lordship of Longford; and Dr. TOWNSON states several springs of salt-water to have been found in the neighbourhood of the tar-spring; and that in the parish of Broseley, on the opposite side of the Severn, salt is said to have been made formerly, from water taken out of pits, still called the Salt-house Pits. At the Lyth, in the parish of Cundover, is a field, the soil of which is impregnated with salt; and there is no doubt but this commodity could be gotten in this county, though its proximity to the extensive and

established salt-works of Cheshire, may prevent any profit from an adventure of this kind. At Kingley Wick, about two miles west of Lilleshall-hill, is a "spring of salt-water, that yields 4 or 5000 gallons in the 24 hours. It is an impure brine, but was formerly used; the salt-pans and buildings are still remaining. It flows out of a reddish sandstone-rock, which rests upon a reddish chert, like that of the Wrekin*." And at Admaston, near Wellington, only two miles from Kingley Wick, there is a salt medical spring, chalybeate and hepatic. There are two springs; the one containing carbonated iron and lime, selenite, and sea-salt; the other, hepatic air, aerated lime, selenite, and sea-salt†." The MS. history of Bradford hundred, before quoted, says, "at Moreton Say, is a mineral-water, that purges those who drink it." There is also a well not far from the parsonage-house, that I am pleased to record, as it was fenced in under the directions

* This brine is now used for the making of soda, at a work established at Wormbridge, on the banks of the canal there, as will be seen by the following note, which is one of many favours I have received from Mr. DUGARD, of the Salop Infirmary.

"At Wormbridge, near Wellington, as well as at several other collieries in the neighbourhood, martial pyrites are found in considerable quantities. After being cleared from the coal (sulphureous coal) in which they are found, the lumps, which are perhaps from twelve to fourteen pounds weight each, are disposed in loose heaps, upon a bed, or large area, paved with bricks, and inclining from the circumference to the centre, to allow the water with which the whole is repeatedly sprinkled, ultimately to flow into a large reservoir which is constructed at this place. The pyrites are thus exposed to the action of the air, as well as frequent waterings; the decomposition of them, produced by this process, forms sulphate of iron (martial vitriol) in considerable quantities, and was a few years ago evaporated and crystallized, and allowed to be by the consumers, as pure a salt of iron as any ever made in Great Britain. The demand for it was greater than the work, in its infant state, could supply. It is now no longer carried on as a vitriol manufactory; but the acid obtained from the pyrites, is wholly consumed in getting the soda from rock-salt and the brine of Kingley Wick."

† TOWNSON'S Tracts, p. 179.

of

of the late Archdeacon CLIVE, and which continued to partake of the care and consideration he had for the things, as well as the persons, around him. Dr. DARWIN informs me, that this spring is valuable as a strong chalybeate, but that it has no other peculiar qualities. There is a spring near Ludlow, that contains a very little fixed air, some magnesia, a little lime, and a good deal of sea-salt. Its strength is irregular, as a medicine; it is sometimes about as active as sea-water, I am told, but frequently weaker. A pint is a usual dose; but very large quantities have been drunk, without any fatal effects.

Between Welbatch and Pulley-common are two wells, called Hanley, or Boothby Spa. The water of both is weak. The one contains sea-salt, muriated lime, magnesia, and selenite; the other has, with these ingredients, a chalybeate. Near Sherlot-common, in the neighbourhood of Wenlock, is a strong chalybeate-water. On Prolley-moor, near the western side of the Longmynd, is a spring that contains a small proportion of selenites and of sea-salt, but muriated lime is the principal ingredient. It shews no appearance of iron with the usual test. I shall conclude this Section with an account of Sutton Spa, near Shrewsbury; for the whole of which, I am indebted to Dr. EVANS; and if an obligation becomes lighter by being divided, I doubt not but the readers of the article will readily join in sharing its weight.

“Sutton Spa is situated within two miles south of Shrewsbury, on the slope of a gentle eminence, and close to a village of the same name, the property of the Right Hon. Lord BERWICK. The spring issues from a rocky stratum of ash-coloured clay, or argillaceous schistus, containing (as appears by its effervescence with nitrous acid) a small portion of lime; and in its present and unimproved state, yields but a scanty stream. In the neighbourhood

bourhood are several beds of soft limestone and coal, the latter mineral accompanying nearly the whole course of Meole-brook. In the Sutton pits it is mixed with so large a proportion of pyrites, or sulphuret of iron, as to be used only for inferior purposes.

“Fresh from the spring, the Sutton-water is clear and colourless, and exhales a slightly sulphureous smell; which is most perceptible in rainy weather*. It sparkles little when poured into a glass, having no *uncombined* carbonic acid in its composition. When first drawn, its strong salt taste is evidently mixed with a chalybeate flavour; but the latter is wholly lost on exposure for a few hours, bubbles of air separating slowly, and a reddish sediment lining the sides and bottom of the vessel.

“Its temperature, the thermometer in the open air standing at about 70°, varied from 53° to 55° of FAHRENHEIT; but at another time, the thermometer in the air being at 55°, sunk as low as 48°.

“The infusions of litmus and red-cabbage, were not reddened by it, when fresh, nor greened after boiling, or long exposure; shewing the absence of any disengaged acid, or alkali, or of any material portion of earthy carbonate.

“When fresh, it instantly struck a reddish purple, with tincture of galls; but no change was produced, when it had been boiled a few minutes, or exposed some time to the atmosphere. The former circumstance clearly proves the presence of iron, and the latter, that it was wholly held in solution by a fugacious acid.

“Mixed with lime-water, it deposited a reddish sediment of the carbonate of lime, and iron oxyd; and with caustic

* The decomposition of pyrites, and consequent evolution of hepatic air, or sulphurated hydrogen gas, being in proportion to the quantity of water present.

ammonia, a reddish cloud, formed by the above metal, with probably a small portion of magnesia.

“The saccharine, or oxalic acid, threw down a large and immediate precipitate of oxalated lime. With mild kali, a copious dirty sediment was instantly formed of earth and iron, separated from their acids by the superior affinity of the alkali.

“The marine and nitrous acids produced no change, or rendered it more transparent; but a few drops of sulphuric acid produced instantly a copious deposition of selenite.

“Muriated barytes did not shew the presence of any sulphuric compound.

“A solution of accecited lead caused an immediate milkiness in the water, which however became perfectly transparent on the addition of distilled vinegar. This also proves the absence of any sulphuric acid, which would have formed with the lead an insoluble compound. Characters traced on paper with the above solution, and exposed to the vapour of the *fresh* water, became visible, of a light-brown colour, by the action of hepatic air, or sulphurated hydrogen gas. Some silver-leaf exposed to its vapour, became faintly yellow, and a globule of bright quicksilver was slightly tarnished. But a solution of nitrated silver produced merely a white precipitate, turning blue on exposure to light; the usual effect of the muriatic acid; the quantity, therefore, of hepatic air is probably very small.

“A portion of the water, evaporated slowly, formed beautiful cubic crystals, which, with a drop of sulphuric acid, gave out the peculiar smell and grey fumes of the muriatic acid.

“From a gallon of the water fresh from the well, were obtained eight ounces, or about $14\frac{440}{1000}$ cubic inches of volatile contents, of which, about one-eighth part extinguished

guished flame, precipitated lime-water, and was evidently carbonic acid. On applying to the remainder (which was not soluble in water by repeated agitation) the flame of a candle, a slight combustion took place, and afterwards the flame burnt nearly as well as in common air. One measure of this air, mixed with an equal bulk of nitrous air in an accurate eudiometer, was diminished from 200 to $1.\frac{350}{1000}$, while the common air of the room, added to nitrous air in the same proportion, was lowered to $1.\frac{109}{1000}$, its purity being in a direct ratio to the degree of diminution. It was therefore atmospheric air, with a slight mixture of sulphurated hydrogen gas, and somewhat more than the usual portion of azote, as is always the case with the air of chalybeate waters.

“A wine-gallon of the fresh water being evaporated to dryness, there remained of residuum, 2 ounces 3 drachms, or 1320 grains; this, mixed with 12 ounces of cold distilled water, left on the filter 12 grains of a reddish-brown sediment.

“Caustic ammonia, added to the clear solution, did not precipitate any magnesia worth collecting; but mild kali threw down a copious sediment of aerated lime, which, on exsiccation, weighed 206 grains; and must (according to BERGMAN and KIRWAN) have been produced from 226 grains of muriated lime, the former containing $\frac{55}{100}$ parts of pure lime, and the latter $\frac{50}{100}$ of muriatic acid.

“Subtracting this, and the twelve grains of brown residuum, from the whole, there remain in a gallon of the water 1082 grains of muriate of soda, or common salt. The 12 grains of residuum, treated with diluted marine acid, and again precipitated by caustic ammonia, produced nearly half a grain of iron oxyd, which, fused with charcoal by the blow-pipe, was strongly attracted by the magnet, and assumed some degree of metallic lustre. The
remain-

remaining $11\frac{1}{2}$ grains, insoluble in the acid, evidently consisted of clay, mixed, as appeared in a magnifier, with several crystals of silex, which were probably merely suspended, and not in a state of solution, in the water.

		Grains.
We have then, in a wine-gallon of the Sutton-		
water, of muriate of soda,	-	1082 0
Muriate of lime, with an admixture of muri-	}	226 0
ated magnesia,		
Carbonate of iron,	-	0 5
Clay and silex,	-	11 5
Total of solid contents,		1320 0

		Cubic Inches.
Carbonic acid,	-	1 805
Common air, contaminated with azote, and	}	12 635
sulphurated hydrogen gas,		
Total of volatile contents,		14 440

“This, in common with most mineral waters, varies not a little in the quantity and proportions of its ingredients, at different seasons, and in different states of the atmosphere. At one time, the caustic ammonia produced no effect on the water; at another, it deposited a very considerable portion of magnesia; and the hepatic smell is sometimes not in the least perceptible, particularly in dry weather*. But, however provoking these variations may be to the accurate chemist, they are luckily of little moment to the practical physician. A considerable latitude, in this respect, makes no material difference in

* In the present exposed state of the opening of the well, this must particularly happen, rainy weather weakening the saline impregnation, and a warm air exhaling the gases, and precipitating the iron. The well known effect of salts, in operating more powerfully as they are the more diluted, compensates for the diminished strength of the solution.

the medicinal effects; much more depending on the quantity of the water, as a diluent and detergent, than on any other circumstance.

“ I am greatly indebted to my ingenious friend, Mr. DUGARD, house-surgeon to the Salop Infirmary, for his kind assistance in making the above analysis.

“ The Sutton-water has by many been compared with that of Cheltenham, and supposed to contain nearly the same ingredients. It bears, however, a much closer resemblance to sea-water, as will be evident from the annexed table*.

“ We have accordingly found it most beneficial in those cases for which sea-water is usually recommended. It yields the same salutary stimulus to the stomach, in chronic weakness of that organ, and obviates both mildly and effectually the habitual costiveness of hypochondriac patients. Diluted in a large portion of liquid, the saline ingredients serve to wash out any acrid serdes collected in the first passages, which I believe to be one of the most important uses of mineral waters. On no other principle can we

	Carbonate of iron.	Selenite.	Muriate of soda.	Muriate of lime.	Muriate of mag- nesia.	Sulphate of lime and magne- sia.
* In a wine-gallon of Cheltenham- water, as ana- lyzed by Dr. FO- THERGILL.	5	40	5	0	25	480
Sutton-water.	$\frac{1}{2}$	—	1082	226	—	—
Sea-water, taken up 60 fathoms deep, in latitude of the Canaries, and analyzed by BERGMAN.	—	45	1928	—	524	—

It must here be observed, that the sea being more strongly impregnated with salt in proportion to the warmth of the climate, contains on our coasts not more than $\frac{1}{30}$ its weight, instead of $\frac{1}{23}$ of saline contents.

explain

explain the uniform good effects produced on the digestive organs by waters so various in the nature and proportion of their contents, and in the degree of their impregnation.

“Conveyed by the lacteals into the mass of circulating fluids, and thence through the different secretory organs, this water has proved highly serviceable in a great variety of glandular affections; and, being disposed to pass off with the finer parts of the blood, promotes the excretions of urine or perspiration, according to the attendant circumstances of clothing, temperature of the air, &c. Absorbed by the lymphatics, the acrid muriates stimulate the torpid vessels, and wash out any acrimony accumulated in consequence of that inirritability. We hence may readily explain their efficacy in those disorders to which the poorer classes are particularly liable, chronic diseases of the skin, and scrophula. In the former, which have so improperly been termed *scorbutic**, this water has been found a very valuable remedy, both externally and internally applied.

“In the cure of scrophula, the superior merits of seawater, first introduced to public notice by Dr. RUSSEL, has ever since been uniformly and universally acknowledged†. A similarity of ingredients would naturally lead us to expect similar effects from the Sutton-water; and I am happy to bear testimony, that a twenty-years attendance at the Salop Infirmary, as well as in private practice, has furnished me with abundant proofs of its success in the treatment of scrophulous affections. Yet I will frankly

* I say *improperly*, because the real scurvy is connected with a state of the system the most opposite of any to the diseases here mentioned.

† It is worthy of remark, that almost every popular remedy for this complaint, contains the marine acid in its composition. At one time, the muriated barytes was in high celebrity, and now the muriated lime is rising into equal credit. I have often prescribed with success, the tinct. ferr. muriat. as combining the tonic powers of iron with the stimulus of the acid; but I think I have found the simple marine acid full as efficacious as any of its combinations.

own, that in this deceitful, and, I fear, increasing malady, the effects of medicine are frequently but too fallacious. At certain seasons of the year, and particular periods of life, the symptoms will subside spontaneously, and the credit due to Nature, be given to the remedy last employed.

“ In addition to the above properties, possessed by the Sutton spring in common with sea-water, it enjoys one evident advantage, in containing iron. Though the minute portion of it, in this and many other mineral springs, may be thought inadequate to any useful purpose, experience, our surest guide, has amply proved the contrary; and it is now well ascertained, that small and repeated doses of this valuable metal, produce far more beneficial and permanent effects on the constitution, than the much larger ones formerly prescribed.

“ It has been variously administered, either as a calx, or oxyd, or as already combined with an acid solvent; but in no form has it proved so uniformly efficacious as when prepared by Nature herself, and existing as a carbonate in chalybeate springs. Winged as it were, by its aerial acid, it pervades the remotest vessels and minutest capillaries of the system, invigorating every fibre, and rendering evacuation by the saline ingredients, both safe and salutary. Of the external use of this water as a cold, or tepid bath, I can speak from theory alone, no such conveniences having been as yet provided. But analogy fully warrants us to suppose it nearly as powerful as sea-water, and applicable to the same useful purposes. In cutaneous foulnesses, in scrophula, in chronic rheumatism, paralytic affections, and, above all, in the cachexies of young females, attended with uterine obstructions, we have every reason to expect the greatest advantages from its applications as a warm or tepid bath.

“ This

“ This being by no means intended as a medical communication, I have given merely a faint sketch of the virtues to be expected from the Sutton-water. The outline may be readily filled up hereafter, whenever the improved state of the Spa shall require a more accurate description of its best modes of exhibition, and the diseases to which it is applicable.

“ Though its value has been long felt and acknowledged by the immediate neighbourhood, the spring still remains in a very rude and neglected state; an iron spout, attached to a piece of wood stretched across the opening, forming the only channel for the water's exit. Entangled in its passage to the brook below, it has produced an artificial morass, its surface being abundantly covered with ochery scum, from the deposition of iron oxyd. Some time since, it was held in contemplation by the noble proprietor, to erect baths, &c. for the accommodation of invalids; but the military avocations of the day, postponed the truly benevolent institution. With the return of the blessings of peace, it will, I trust, be resumed, and an inestimable benefit thereby conferred on an extensive and populous district. The morass might easily be drained by channels communicating with the brook; and baths erected on this site, would have both a constant supply from the well, and a regular discharge of the refuse-water.

“ While almost every fishing village on the coast is preparing conveniences for sea-bathing, how desirable would it be to extend similar advantages to the interior parts of the island, where poverty, or infirmity, render it impossible to visit the distant sea! In this county, abounding in minerals, whose subterraneous wealth is beyond all calculation, there is probably scarce a parish that would not supply a mineral-water for the benefit of the neighbouring poor, were the springs properly examined.

“The air of Sutton, as might be expected from its open elevated situation, is dry and wholesome. The site commands a rich and highly variegated prospect, bounded on one side by the magnificent group of Freyddin and Moel y Golf, with a long range of Welsh mountains rising in full majesty beyond them; and on the other, by their no mean rivals, the Wrekin and Stretton hills. The view of Shrewsbury, betwixt the branches of the adjoining wood, particularly when the setting sun gilds every object with his mellowest light, is greatly and most deservedly admired. The walk from Shrewsbury is pleasant and picturesque; and the neighbourhood of a reasonable and abundant market, can be considered as no trifling object, when compared with the extravagant prices and scanty accommodations of many of our remote watering-places.”

SECT. VI.—WATER.

THE river Severn runs through this county, from N. W. to S. E. and is navigable the whole way; but its navigation is very much impeded by the lowness of the water in summer, and by floods in winter. It is the only navigable river. The vessels chiefly used on it, are barges, trows, wherries, and boats. The barges and trows have masts, which can be lowered, to go under bridges: the stream carries them down, with or without a sail, and they are towed up by men, assisted, or not, in the same manner, according to the wind. The barges are from 20 to 80 tons burthen, and trade very much between Shrewsbury and Gloucester. The trows are larger, and belong to the ports lower down the Severn. They fetch timber from Pool-quay, in Montgomeryshire, and are used to convey goods between Gloucester and Bristol, that are carried

ried in smaller vessels to or from the first of those ports; but much the greatest number of barges is employed in carrying the produce of the mines near Coalbrook-dale into the counties of Worcester, Gloucester, &c. A horse towing-path is now established from Bewdley to Coalbrook-dale, which is more and more used, and, it is hoped, will soon be extended, the office of towing barges by men, being looked upon as very injurious to their manners. Coracles are another kind of vessel used upon this river by fishermen, who are skilful in the management of them whilst upon the water, and who carry them home, by depending them from the top of their heads, down their backs. Mr. PENNANT mentions them, as used also upon the Dee. He says, "the ancient British boats, the *Vitilia Navigia* of PLINY, the modern coracles, are much in use in these parts, for the purposes of salmon-fishing. They have now lost the cause of their name, being no longer covered with coria, or hides, but with strong pitched canvas. They hold only a single person, who uses a paddle with great dexterity. The Britons had them of large size, and even made short voyages in them*." This account applies to the Severn coracles, except that the latter appear the more genuine vessel, as they still retain the material from whence they are named. They are formed of ashen laths, two or three inches broad, and covered with horse-hides.

Wines and grocery goods are brought up the Severn, from Bristol and Gloucester, to Shrewsbury, and so on to Montgomeryshire; and from Coalbrook-dale many vessels are laden with coal, and with the produce of their iron-works, potteries, china, &c. The opposite shore of Broseley affords also the same loadings. There is limestone on

* A Tour in Wales, vol. i. p. 234.

both sides the river, but it is no great export, except when burnt into lime. There is a wharf, or quay, for vessels at Bridgnorth, some miles below Coalbrook-dale, and the same convenience at Shrewsbury, considerably higher up the river; but there is no great port in this county; perhaps 50,000 tons of coal are exported annually from Coalport, and a considerable quantity of goods, for the supply of Wellington, Newport, Shifnal, &c. are imported there. The principal warehouse extends over the canal, and is upon the bank of the Severn, so that goods can be taken up through a trap-door out of the canal, and let down into vessels in the river, or *vice versa*. Flannels are exported from Shrewsbury, and grain, cheese, and lead. Soap is both imported to Shrewsbury from Bristol, by retail dealers, and soap made in Shrewsbury, is exported down the Severn, and starch.

The fish found in the Severn, as it passes through Shropshire, are, 1. Salmon, which come up the river with the first flush of water after Michaelmas, and are in high season till May. This fish often sells now from 1s. 6d. to 2s. 6d. per pound. Some years ago it was cheaper; but in the beginning of the last century, it was full as dear as it is now, and was almost entirely bought up for the London market at that price; which is extraordinary, considering the value of money at that time, and the length of time necessary to convey it. At a former period, salmon is reported to have been so plentiful at Shrewsbury, that stipulations were made in the indentures of apprenticeship, fixing the number of days in a week on which the master may serve it as food to his apprentice. 2. Flounders, which are reckoned a delicate fish, from this river. 3. Pike, which, in the Shropshire part of the river, are rather scarce; but higher up, viz. in Montgomeryshire, they are more plentiful, and most excellent.

cellent. 4. Trout. 5. Grayling. 6. Perch. 7. Eels. 8. Shad, which come into the river in April, to spawn; and if caught before they have spawned, they are good; afterwards, on their return, they are very poor*. 9. Bleak; a small fish, supposed by some persons to be young shad; but it is not known to be so. 10. Gudgeons, in good plenty. 11. Chubs. 12. Roach. 13. Dace. The three last fish are in great numbers. 14. Carp are found in some deep parts of the river. 15. There are some lampreys in the Shropshire part of the Severn; in Worcestershire they are more plentiful. 16. Ruff. 17. Bullhead. 18. Loach. 19. Stickleback. 20. Minnow. 21. Botling. 22. Lamperns. Mr. PENNANT remarks 20 sorts of fish, which may be met with in the river Vyrnyw, and looks upon the number as remarkably large. According to this list, the Severn contains 22 different sorts.

There is neither lock nor weir upon the Severn, from Pool-quay, in Montgomeryshire, to the mouth of the Avon, near Bristol; a distance of 155 miles. From its source in Plinlimmon-hill to the sea, it runs about 200 miles, but is navigable only from Pool-quay. Its course through Shropshire is between 60 and 70 miles. Some years ago, attempts were made to procure the improvement of its navigation, by deepening the shallows and erecting locks, but the scheme was opposed, and defeated. The contributory rivers within the county, are, first, the Camlet, which rises on Corndon-marsh, and which, within a few miles of its source, runs nearly parallel with the Ony for some way, but upon a different declivity, when turning W. and N. W. it runs into the Severn, a little beyond the confines of the county, and almost opposite to the village of Berriew, in Montgomeryshire, having

* "I have heard that this fish is scarcely eatable, caught in any other rivers in the kingdom, except the Severn, or Wye."—*Mr. William Reynolds.*

fallen in the course of the last fourteen or sixteen miles, about 300 feet. The Severn comes into Shropshire again near Molverley, having just received on its north bank, the considerable river Vyrnyw, which, for some miles previous to its confluence with the Severn, forms the boundary of the counties, and receives on its Shropshire shore the Morda-brook, increased by a smaller stream. A little below Montford-bridge, the river Perry, increased by five smaller streams, runs into the Severn on its north bank. At Shrewsbury, the Meole-brook, a considerable stream, runs into the south side; four smaller streams having been before received on the same bank. The Meole is increased by the Rea, that rises out of Marton-pool (there are at least two other brooks distinguished by the same general term, in other parts of the county). The Rea receives at least fifteen smaller streams, before its junction with the Meole. Between four and five miles east of Shrewsbury, the river Tern joins the Severn on the north. It rises in Staffordshire, but soon enters this county, running south, near 30 miles perhaps, taking in its windings, which are not so contorted as those of many other rivers. Cherrington-brook, the Strine, the Lee, and the Roden, which unite near Walcot, with four nameless streams, are auxiliaries to the Tern. Bell-brook joins the Severn on the north, and Cund-brook on the opposite side, near a village and mansion of the same name. ROCQUE, in his map, makes this a stream of only two or three miles from its source, but it is in fact a continuation of the Quaking-brook, rising in the parish of Church-Stretton, called at Longnor, the Rea-brook, and afterwards the Cundover and Cantlop-brook, and which runs from its source above thirteen miles north and east, having received three contributory streams without names, and at Cund-stank, the Bull-brook. ROCQUE's mistake is, making the first eight
or

or nine miles of the brook in question fall south into the Ony; but the division of the different declivities is near Church-Stretton, and not within two or three miles of Cund; and the original spring or field where it rises, has the name of Cund-sitch. Between Cund and Bridgnorth, the Severn receives west, five or six smaller brooks, and on its east side, two of the same description. Near Bridgnorth, the Worf river, consisting of Hom-mill-brook, Cossford-brook, and at least four others. Below Bridgnorth the Severn receives, west, Marbrook, augmented by Beggars-brook, and another smaller stream. Lower down, on the same side, Bore-brook, increased by three others. Between Bore-brook and Dowles, the Severn receives two small streams west, and one east, and soon after enters Worcestershire, near the port and borough of Bewdley. The streams that irrigate Shropshire, north of the Severn, and do not fall into it, are the Morles, which rises in Sellatyn-hill, and runs into the Ceiriog, which joins the Dee near Chirk. Shel-brook runs to the Dee from near Welsh-hampton. Elf-brook, near Whitchurch, and the Weever, with three contributory streams, become a considerable river through Cheshire. South of the Severn, and not far from the course of the Camlet, already stated to have run into that river, we meet with the Clun, which joins the Teme near Leintwardine, in Herefordshire. Kemp-brook, and four others, fall into the Clun. The Ony joins the Teme near Oakley-park. This river was stated to run for some way parallel with the Camlet, which in its course W. N. W. to the Severn, had a fall of about 300 feet. The fall of the Ony, from where it takes a different direction to the Camlet, to its junction with the Teme, is about 300 feet also. Quanny-brook and Stradbroom, having united, join the Ony before its confluence with the Teme; and at Ludlow, the Teme is

augmented by the Corve, which flows for many miles through a valley to which it gives name. The Corve is augmented by two brooks, and one of them is a junction of three small streams. Ledwich-brook, with three contributory streams, and the Rea with five, join the Teme, which having varied somewhat in its course from the boundary of the county, and forming the boundary in some places, finally leaves it near Tenbury, in Worcestershire, and falls into the Severn below the capital of that county. The Teme is celebrated for grayling; there is trout also in plenty.

Thus we have a hundred, or more, rivers and brooks, or parts of rivers and brooks, that are of consequence enough to be noted in some of the maps of the county; perhaps the smaller streams and springs unnoticed in any chart, may be equally numerous. Those specified, according to the estimate to be made from a comparison of different maps, and from some local knowledge, run courses of near 620 miles in length. Where there is such opportunity of grinding corn by water, it is to be lamented that there are any wind-mills; for they afford more probability of general danger than water-mills: they are a nuisance to the eye in most prospects that exhibit them; and are particularly alarming to most horses that have occasion to go near them. It is a duty, indeed, but one not sufficiently attended to, to accommodate roads and these formidable fabrics so far to each other, that they may have as little proximity as possible. In recommending water-mills, the observation should not be omitted, that if main streams are dammed up to supply them with water, a considerable quantity of ground may be made boggy, or unfit for the best purposes of agriculture; but if mills are supplied by phlegms, or small streams, carried off upon a high level above the parent stream for some way

way before they are confined, this evil is prevented ; and the irrigation of land may be increased by the circumstance.

The lakes in this county are neither numerous nor extensive. On the west side is Marton-pool, 640 yards by 510 yards, and containing 45 acres 2 roods 15 perches. From this pool one small stream runs S.W., another N.E., and another N.W. Ellesmere, adjoining the town of that name, covers 116 acres ; Whitemere, 62 acres ; Colomere, 87 acres ; and Croesmere, 44 acres. Newtonmere, Blackmere, and Kettlemere, are in the same neighbourhood, but of less size. Near Whitchurch, are also two meres. North also of Severn, is another Marton-pool, from 40 to 42 acres ; Fennymere, 46 acres ; Llyncllyspool, 8 acres ; Hencot (called Ancot), 25 acres ; and that at Shrawardine about 40 acres, lately made, or rather restored, and which is a fine sheet of water. South of Severn, is Beaumere, a beautiful, but small lake ; and almost adjoining it, is Shomere, which probably once covered the adjoining morass. Thus, that side of the county which abounds most in running water, has few pools of any size. Such as serve the purpose of keeping fish, are general throughout the county.

At Walcot and Hawkestone, are artificial lakes, or rivers, of very considerable extent ; the latter is two miles long. Sundorn and Halstone have embellishments of the same kind. The water in Acton Burnel park, covers 25 acres, and that at Aston 11 acres.

CHAP. II.

STATE OF PROPERTY.

SECT. I.—ESTATES, AND THEIR MANAGEMENT.

“ THE sizes of both the estates and farms in this county, are very various : here are estates of noblemen, and of several commoners, which cover from 10,000 to 25,000 acres each ; while there are an infinite number of freeholders’ and yeomens’ estates, of all inferior sizes*.”

Landed property is considerably divided in Shropshire, more so, perhaps, than is generally imagined. In the parochial visitations of my archdeaconry, I have inquired the number of proprietors in a parish, and generally found them more numerous than I had expected. If I asked who were the proprietors of the next parish, a few of the most opulent were named ; but when I arrived there, I again found the number far exceeding the general estimation. Manufactures and commerce, the professions of arms and of the law, raise men of small fortune to affluence ; and their riches enable them to concentrate the estates of others. But again, men of hereditary fortune become forced to alienate their domains, and these, perhaps, are parcelled out among purchasers of inferior wealth. The thrifty farmer, or mechanic, supplies the place of those proprietors who have sold their lands for the sake of

* Original Report.

increasing their stock, or of trying their fortune in manufactures; and some of these may, in the first or second generation, again become purchasers of real estates. The number of gentlemen of small fortune living on their estates, has decreased: their descendants have been clergymen or attornies, either in the country, or shopkeepers in the towns of their own county; or more probably in this county, emigrated to Birmingham, to Liverpool, to Manchester, or to London: but then the opulent farmer, who has purchased the farm he lives upon, or some smaller estate, which he sets or holds, with the large one he before rented, is a character that has increased. Whether the proprietors of land in this county are more or fewer than heretofore, I have no practicable means of knowing.

At the contested election, in the year 1713, above 3000 persons appear to have voted; but then freehold leases were more common formerly than at present; and a poll-book does not include women, copyholders, or freeholders, under 40s. of annual value. I am led to think, that the freeholders and copyholders cannot now be less than 3000*; that their estates vary in value, from 1 l. per ann. to several thousand pounds per ann.; that the proportion of the estates of 10 l. a year, and under, may be nearly one-third in number of the whole; and that those of more than 10 l. a year, and not exceeding 100 l. a year, are above one-half of the whole number; that the largest estates are, in general, parts of estates, *i. e.* the proprietors have estates in other counties; that of those who have no property out of this county, above one-half reside upon their estates; that the proportion of those who have estates

* 1752 freeholders are returned as liable to serve on juries; this list, of course, excludes non-residents, women, persons above 70 years of age, and those of very inferior estates, though it admits copyholders of 10 l. a year, and more.

in other counties, may be about one-twelfth in number, but that, in property, they possess full two-fifths of the whole ; and that of these partial proprietors, one-fifth may reside a part of the year on their estates.

The landed income of this county may be about 600,000*l.* per ann. and of this, one-twentieth part may be paid in tithe by composition (for scarcely any is gathered) to the parochial clergy. I made my calculation of the value of the county, without looking at the acreage ; and I am somewhat confirmed in it, by adverting since to that datum, and to Mr. BISHTON's assertion in the Original Report, that land lets, upon the average, at 15*s.* per acre titheable. Take the county at 896,000 acres, the rental, at that average, would be 671,600*l.* a year, leaving a deduction of 71,600*l.* a year to be made for the waste lands ; so that, as a general position in round numbers (pretending not in this, or any other assumption of political arithmetic, to be more accurate than something near the truth), I perhaps do not greatly err, in reckoning the value of the county, in land and houses, at 600,000*l.* per ann. or that, at least, it is not an excessive valuation, when intended to include the tithe. Without including the tithe, I should think 15*s.* per acre rather an high valuation for the county throughout, though not so, perhaps, for the side of the Severn where Mr. BISHTON resides.

There are several respectable land-agents in this county, who are very generally employed in valuing and setting farms, and who receive the rents also from some estates. On other estates, the landlord, or a common steward, or sometimes an attorney, receives the rents. Several large estates have been materially improved by the judicious management of land-agents by profession ; so much so, that the face of the country has become quite altered.

Mistaken

Mistaken ideas of serving their employers, may, in particular instances, have caused some to favour the farmer, at the expense of the labourer, though others are entitled to additional praise, for attending to their accommodation: but I reserve my opinions on this subject for their proper place. I am now only guarding my commendations from being indiscriminate; for indiscriminate approbation, as well as blame, is generally unjust, and may be equally mischievous.

SECT. II.—TENURES.

“THERE is much copyhold-tenure, but of easier customs than in the neighbouring counties*.” The lords of some customary manors have enfranchised the copyholders, upon receiving an equivalent in money. The customs of the greater number are preserved and acted upon. In the manors of Ford, Cundover, Wem, and Loppington, the lands descend to the youngest son, and in default of sons, to the youngest daughter. In the manors of Cardington and of Stretton, estates descend to the eldest son, and in default of sons, the daughters are coheiresses. The fines and heriots also in these two manors, though somewhat different, are so fixed and easy, that it may be doubted whether the tenure is not preferable to freehold. It appears beautiful in theory, that there should be one rule of descent in a kingdom only, one tenure of property, and one scale of political rights; but it may be doubted whether so much uniformity is suitable to an imperfect state; or at least to our present degree of improvement. At all events, irregu-

* Original Report.

larities that are not attended with much practical inconvenience, should not be pointed out as obnoxious, in a scheme that has produced so much positive happiness, and so much comparative good, as the constitution of these kingdoms has afforded. The best apology for the unequal distribution which has accidentally obtained in the political right of voting for representatives in Parliament, strikes me to be this—that if an uniform designation of this right were attempted, wherever the scale stopped, all of the class below it would have a common interest in wishing to oppose the settlement that may have been made with a view to general good; but where the political privilege that is desired in one district is enjoyed in the next, and the privileges themselves various and intermingled, and generally attainable, unpleasant distinctions of classes in a state are avoided, and combinations for power checked.

CHAP. III.

SECT. I.—HOUSES OF PROPRIETORS.

THE public buildings lately erected within this county, have been very considerable ; and several mansion-houses have been formed, re-built, or improved. Again, many old mansions are become farm-houses. The money paid by the landholders, within 30 or 40 years, for the materials and workmanship in public edifices, or in their own houses, must amount to some hundred thousand pounds. In stating the number of mansion-houses, it is difficult to draw the line. BOWEN, in his map, names 30 ; five, at least, of which, are now deserted or destroyed ; but BOWEN confined his list to very great places, and even then his list was defective. BASIL WOODE, in his map, of a much earlier date, has taken a very wide range, giving the arms of 204 families, and representing the houses of 146 proprietors, purporting to be the gentlemen's seats in the different hundreds ; but his list, both of arms and houses, was deficient, some of the first families and places being omitted ; and the reference from one to the other of those inserted, is both inaccurate and incomplete. Had it been otherwise, the regular omission of arms and houses might be accounted for, by supposing those of subscribers to the map only were inserted. Of the seats represented in WOODE's map, 86, at least, are now farm-houses, and three, at least, are destroyed. There are, however, considerably

siderably above 100 houses, of good respectability, kept up, and occupied more or less, and chiefly by their owners.

Without intending to interfere with the right of private judgment, which must always direct the operation of general rules, and without attempting to decide upon the influence, from circumstances, that must so frequently control the conduct of individuals, and whose conduct may be perfectly right, though contrary to the best general rules, still the suggestion of leading principles is sometimes useful, and I would offer to landed proprietors in this place, a consideration of how much their own good, and that of the community, may be oftentimes promoted, by a residence upon their estates; and by the concentration of their property, so that as much of it as possible may be within the sphere of their personal influence. I do not want persons of large fortune to become their own stewards; perhaps those who reside in the country, and are intent upon the general improvement of their neighbourhood, want professional assistance of this kind, even more than absent proprietors: they have not only the most use of this assistance, but they can see that it is beneficially exerted. It is a medium between their own ideas and the views of those who are uneducated; it is a medium of inquiry and of mutual information; it begets necessary explanations; it conveys necessary admonitions. Independent of what is more particularly business, it tends to preserve unbroken the connexion between the rich and the poor.

When a resident proprietor acts from proper principles, excessive poverty is, of course, banished from his district: should he not be the benevolent or well-informed man that may be wished, still the income derived from the neighbourhood is circulated in the neighbourhood, and poverty is relieved. The difference between a village where the proprietor

prietor resides; and one where he does not, may perhaps exemplify the difference between England and Ireland, where absent landlords are much more numerous.

Independent of avoiding the trouble arising from country-duties, particularly the anxious one of a magistrate (but which should be looked upon as a tax due from large fortunes, in return for security), I am well aware, that men of cultivated minds have a great pleasure in the society of London. Whatever their pursuits are, they find dispositions congenial with their own; and in giving and receiving information, they partake of a satisfaction that induces their abode in the capital. That others are drawn there from a love of dissipation, is not the fact I so much wish to advert to, as the frequent or long residence of more respectable characters; but if the propriety of it is doubtful, where no worse object than rational amusement is proposed, the argument must be still more decisive, as the motive is less pure. If, then, the person of fortune spends his time in London, without being a member of the legislature, without professional avocations or particular business there, though his company may be the most select, and though the routine of conversation he is one of the supporters of, may be the most improving; however he may agitate schemes of public or private benefit; still his life is a life of mere theory, and very near a blank to any other purpose, except the filling up of his own time. The impression of mere conversation does not often lead, in such situations, to conviction or to practice. That men of fortune should occasionally visit the metropolis, as the centre of useful information, to abate their local prejudices, to aid their wishes after, or invigorate their ideas of usefulness in their stations, is highly desirable; but they must return to the scene of their property, to fulfil these

wishes and complete these ideas. Such views too will fence them against those feelings from which we may date the evil of deserted mansions, so far as the evil extends. The system of manners in any country, will always be a most powerful engine of its prosperity or its ruin. It is within memory, I believe, that the bulk of the larger landholders seldom visited at each others houses, unless there was great proximity of neighbourhood or kindred; or their visits were confined to festivals; or at least, there was not that constant intercourse of private dinners, those regular meetings of miscellaneous company, that have prevailed so much of late, and which have descended in a considerable degree among farmers. The gentlemen of a county used to meet at the assizes, and that the ladies of their families may meet there too, dancing-assemblies became the ill-sorted appendage of a season set apart for very serious discussions. I cannot help remarking in this place, how little there may have been of propriety or of prudence in engrafting on such an appointment, amusements of airy gaiety, which must appear unsuitable, as contrasted with the purposes the gentlemen of a county are called there for; unsuitable, as making their mission less grave in the eyes of their neighbours and tenants who have their calls and duties to the same place; unsuitable also to the voice of misery, and the solemn functions of that justice that is to decide on the life or death of a fellow-creature. The other season of intercourse with persons of fortune, was that of horse-races; here, indeed, the scene was unmixed; all was gaiety and dissipation, unless the gloom that a few contemplative minds may feel at seeing so large a concourse of people equally involved in the hurry of an amusement, which, though it may be virtuously supported by some, is a snare to the innocence of others, and more especially a
tempta-

temptation to labourers and mechanics to desert that work, the daily profit of which is so necessary to the support of their families; and added to which loss, they incur that of an extraordinary expenditure, ending often in swearing and in drunkenness, in quarrels, and in fightings.

It was found out, however, by persons of fortune, speaking generally, that an ordinary, or a ball, at the assizes, or the races, was not the scene of social pleasure; and hence arose (and it bespeaks the improved taste of the age) the increase of domestic visits. The support of races is very much left to the few gentlemen who are attached to the turf*, and to the representatives in Parliament for the town and county, with which the race is connected. A few other families may attend, if they chance to reside near the spot; but many more go from their homes, on purpose to avoid attending. Thus far then, the state of society was improved. In private visits there would certainly be more comfort and more enjoyment, so far as viands and apartments were concerned; more decency of behaviour, and more room for rational and improving conversation. But it seldom happens that fashions are stationary. That of visiting increased: those who had neither time or fortune, as well as those who were possessed of both; those who had children to attend to, as well as those who had none, became immersed in it, as the custom of the day: it became, in part, a contest for show: the pride of giving the

* Racing, as practised several years ago, was supposed to hurt the breed of the kingdom; and in the year 1740, an Act of Parliament was passed, requiring all horses, &c. &c. that started for any plate or match, to carry the following weights, viz. 5 years old, 10 stone; 6 years old, 11 stone; and 7 years old, 12 stone: this Act was repealed in 1746; and the matches between horses at an early age, and the short distances which they frequently run, makes a fleet, but weak breed, preferable to the bony racer, which would improve the stock for all purposes, those of husbandry not excepted.

best entertainment, was the idea of the vain ; what was introduced by vanity, may have been returned through respect, or a mistaken idea of propriety ;—altogether, it made living in the country much more expensive than it had been. But the mind was grown wedded to company ; life was become tedious without it : but, in town, there would be more choice of company, and at less cost ; instead of two or three days a week, they could visit on six or seven, and still have hopes of retrieving the expenditure of this system which had taken place in the country. The servants upon board-wages, and horses hired from a livery-stable, preclude two principal sources of expense. The servants' hall, and stables, being shut up, there is more chance that the estate will procure a succession of company, or of public amusements ; or, should the saving on one hand not balance the imperious demands of luxury on the other, still the habit of life is established, and must be gone through with. The mansion shall not be visited in the summer ; watering-places continue the society of the metropolis, on much the same terms ; or, if the winter has left no resources for a summer's excursion, a contracted scale of living in the back part of a London house, shall be submitted to.

In attempting to state the rise and progress of this evil, extreme, and, I trust, rare cases, have been mentioned. The persons affording such instances, are not those it is of importance to get back into the country ; but when superior characters consider all the consequences to which the system may lead, they will be anxious to counteract one example by giving another. This county is by no means alluded to, as peculiarly deserted : it has, indeed, great comparative merit in this respect ; but it is very desirable that the landed interest should consider the importance of
culti-

cultivating their country situations, and the duties belonging thereto. Let them cherish real hospitality, in a degree suited to their fortunes, but let them discountenance all exhibitions of show, all competitions in luxury, all frivolous entertainments; let them guard against excess in any species of entertainments. They will not want employment for their time: they can attend to the state of their poorer neighbours; and, in giving them employment, they afford them the means of self-support, and serve them effectually, at the least expense to themselves, and the greatest advantage to the public. In discharging the duties of their station, they contribute (even in the low acceptation of conduct, as belonging to this scene only) to their own comfort, and possibly to their own amusement; to the establishment of their own characters, with all the train of beneficial influence resulting therefrom; furthering the prosperity, the morals, and the health, of the community; cementing those attachments that contribute to the order and the happiness of nations; concentrating that social strength, on which the existence of law, government, and property, so essentially depend.

SECT. II.—FARM-HOUSES AND OFFICES, AND REPAIRS.

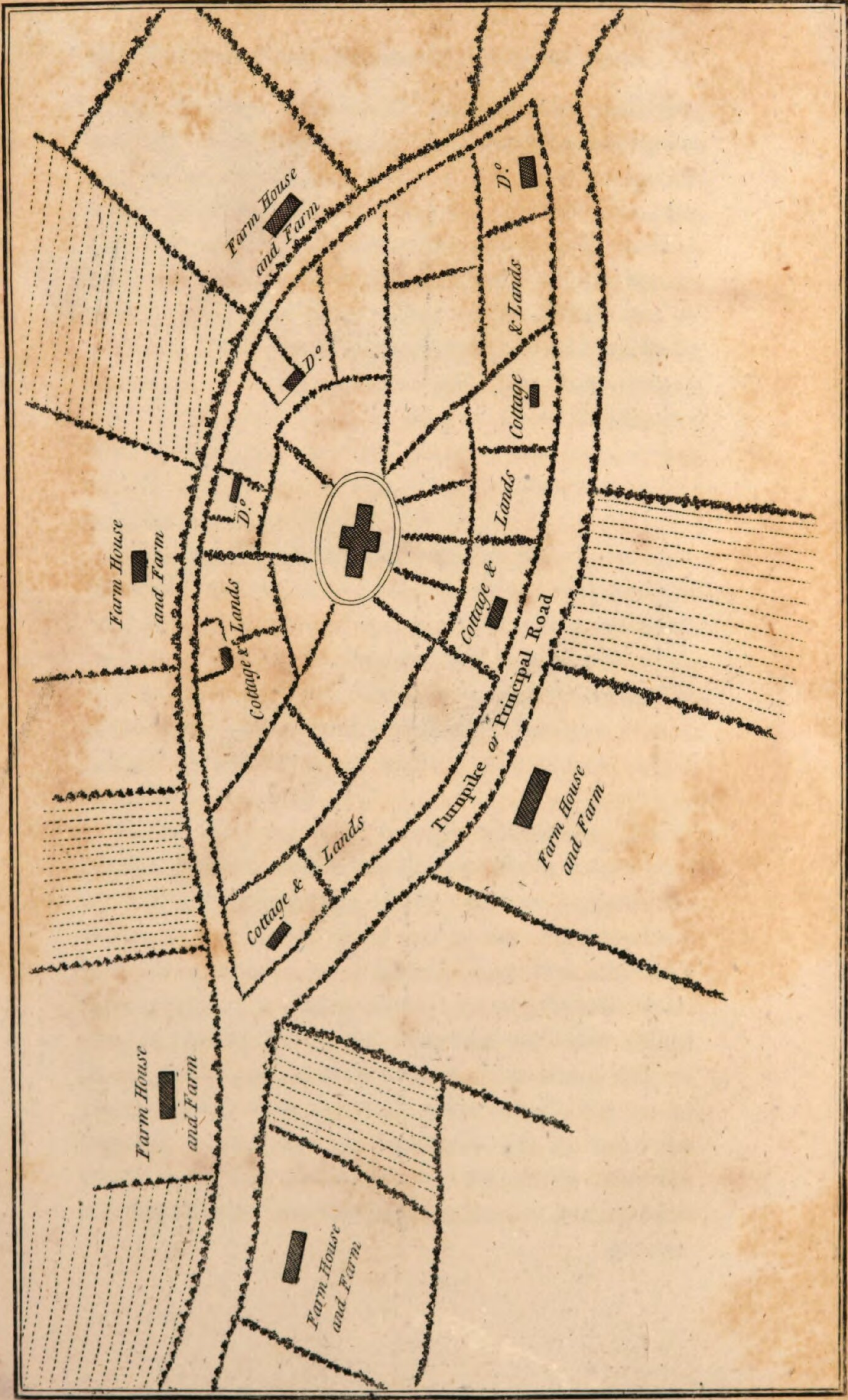
“THE inconvenience of having the farm-buildings in villages, is severely felt, the lands occupied therewith, of course, being distant, reduces the value in some instances two shillings per acre, in many upwards of one*.” Mr. BISHTON states this, immediately after having lamented

* Original Report.

“ property being detached and intermixed in small parcels,” and which intermixture was probably an inducement to building in villages. Every person about to build a house, would have some motive from which he chose the situation; and if his land was not sufficiently compact to admit of placing his habitation centrally thereto, the recommendation of security and of neighbourhood (and of proximity in many places to the church), would operate in favour of the village where there were not contrary inducements. Mr. TENCH, then of Crow Meole, and now of Bromfield, a practical farmer of eminence, makes the following observations in his copy of the Original Report returned to the Board:

“ The farm-houses and buildings, in general, are very inconveniently situated and ill-constructed, many of them being at one extremity of the farm; but the greatest part are situated in villages; those that are not so, are mostly built in some very low situation, by which means the farmer entirely loses the drainings of his fold-yard, which, had he an opportunity of turning over his land, would render him infinite service.”

The late Rev. Mr. LLOYD, of Aston, who was a Member of the Board, and whose opinions derive weight from his judicious management of his extensive property, favoured me with the following observations: “ I have found it advisable, where a set of farm-buildings have required a thorough repair, to remove them to a more desirable situation, in chusing which, the following particulars should be attended to: 1st, A central part of the farm; 2dly, A proper distance from the road; 3dly, A high, but not an exposed, aspect; that the farm-yard may be warm for young cattle, that the manure may be carried *down-hill*, and that the liquid manure may run over as much land as possible.



possible. In places where attention has not been paid to the above, but buildings have been made in low grounds and near to brooks, for the convenience of water, the land has been usually found to be poor, and in bad condition, as a great part of its manure has gone down the stream." Upon this, as upon all other subjects, the best general rules cannot be of universal application; much will be left in every case, to be determined by particular merits. But the circulation and examination of general rules, even where the leading idea is somewhat different, may have its use, as affording more scope for individual discretion to choose out of. I add a communication I made to the Board, in the year 1794.—Farm-buildings being in villages, as now contrived, their inconvenience, in point of situation to the land, does more than counterbalance the advantages; for there certainly are some, in having the houses of a parish somewhat concentrated. The annexed plan I made some years ago, for uniting the different advantages, and which would answer well in founding new villages; and the buildings of many already in existence, may be made to bend more or less to its principle. The houses for labourers and mechanics, are to be placed on the inside a given line (it may be more round, oblong, or nearly square; in short, of any shape the nature of the ground to be built upon may point out, and the effect will be the same). The radii of the inner division diminishing, two or three fields may be added to each cottage, with which the house and garden immediately communicate; a principal road to the front of each dwelling is also gained, and a straight boundary-fence between each tenement; so that trespass is in a great measure prevented; or, if trespass does happen, it will be less mischievous in itself and in its consequences, than between neighbours of less equal circumstances.

cumstances. For instance, the farmer may be irritated against the poor man, because of trespass from his pig or his poultry; and again, the whole grass of a poor man's tenement may be eaten up in a few hours, if the stock of a capital farmer breaks into it. If it is intended to furnish the labourers with gardens only, the same advantages will hold good.

The gardens being separated in the proposed manner, one family cannot offend by looking through the other's window, placing his coal against his neighbour's wall, or by many trifling circumstances, arising from promiscuous occupancy, that engender ill-will. The radii on the outside the given line increasing indefinitely, the farms may be made of any proper size, and still each farm will be within a ring-fence; the fold of each will open into the fields one way, and be near a principal road the other way. Equally with the smaller tenements, the boundary-fence will be straight, and have the effect of preventing trespass, or making it as little mischievous as possible, because the quantity and probability of harm will be mutual, which should make it less violently resented; or, if it has not that effect, the parties are equal the one to the other. The advantages of this concentration of society are, that fewer roads are wanted; and those will be better, because there will be many to do little work; and the damage done by loose cattle, pigs, &c. will be very much remedied;—and that, by their being driven from pasture to pasture, and from fold to pasture (in the present state of many villages, a great nuisance and inconvenience), will be entirely avoided. By placing each farm-house in detached situations central to the farm, a great deal of land is consumed in roads to the houses: these roads are generally very bad, and injure the carriages and the horses as often as they go along them.

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Where all the fields, as in the proposed plan, have communication with the back of the house, occasional roads are procured for carrying out manure, &c. &c. by a proper number of gates, which will always give a good road in the instance, and no ground is lost by it; and for the carriage of fuel and lime, the farmer has the public road till he comes to his own fold. If the landlord, or landlords, of such a property, reside near it, they can more easily overlook the cultivation of the farm and the conduct of the labourer; and as a place of religious worship should be one of the adjuncts to such a plan, it can more easily be resorted to by the well-disposed, and the excuses for not attending, from distance, weather, roads, &c. are very much removed. In the present state of property, the places perhaps are comparatively few, where such a plan could be adopted: still the number of estates sufficiently large and compact for the purpose, are not inconsiderable. Round some villages there are roads already; and where property is much divided, advances towards the principle may be brought about by exchanges; and in the enclosure of large wastes it may be easily adopted. The size, or shapes, as I observed before, may vary with natural circumstances, or artificial ones already in existence; but the principle is, to have the church and smaller tenements near the centre of a parish, or district; to have a road of division completely round them, and that the farms should be on the outside of that road. In the centre, where there is no church, there may be a thrashing-floor, for the use of the grain leased or gleaned, or a well to wash at, and to furnish water.

The late Mr. LLOYD, of Aston, favoured me with the following directions for building or repairing farm-houses and offices: "The windows of farm-houses should be large,

large, and made to admit plenty of air ; but never more than one in a room, or the farmer will inevitably stop them up to save the tax. They should open by sliding, not upon hinges, that the wind may not have power to break them : the same observation will hold good as to those of the out-buildings. If farm-buildings were to be covered upon the roof with boards, and afterwards with slates (which is the usual custom in London), they would be more durable, and not subject to be injured by the necessary work of moving hay and corn in the loft, or barns, and which is committed to the most ignorant servants. The boards may be of deal, and three-fourths of an inch thick." The concluding observation removes an objection to the use of slates, in preference to thatch. At the present price of straw, the comparative expense of blue slates, which are gotten from the neighbouring counties of Wales, is not excessive. In the S. W. district of Shropshire, there are some good quarries of stone-slate, which, though they require stronger timbers than the blue slate, are a valuable cover, when at no great distance ; and they would be much firmer when put on, if the ridge was covered with stone crests instead of a turf, or perhaps no crest at all. Tile-glazed crests will sometimes chip by frost. Any cover is preferable, both in look and duration, to the common clay tiles of this county. Those of Jackfield, indeed, are durable, but all are ugly, and require a sharp pitch or angle in the roof, whilst blue slate is put on a slope, at the elevation of only one-fourth, or one-fifth of the breadth of the building. Mr. LLOYD's observations upon windows are also very judicious. It is melancholy to see the dark rooms, in which farmers' servants are often put to sleep, since the increase of the window-tax. It would be well, if landlords would see that a proper number of windows were kept open

open in farm-houses. An intelligent and active magistrate of this county, once favoured me with the following suggestion, for an alteration in the window-tax, with reference to this subject. "No house used as a farm-house only, to pay for more than 12 windows, = 2l. 16s.; every farm-house with which lands of the value of 150l. per ann. are occupied, shall be rated for not less than 10 windows, = 1l. 14s.; the glass-duty will be much increased, as well as the window-tax; farm-houses will be much more healthy, and grain, cheese, &c. better kept." It is better, indeed, that there should always be a detached granary; and a good granary of moderate size supersedes the necessity of two barns, unless on very large farms. Shropshire farms have, in general, too much building, and every farmer is anxious for two barns, which is really injurious to himself, as well as expensive to his landlord. The less time any grain is in a barn, the better, as it will always be eaten by rats or mice, in a greater or less degree. A barn, therefore, capable of holding a single stack, is always sufficient, unless the farm employs more labourers regularly than can thrash within the compass of one barn; for provision should be made for the employment of all the servants in wet weather. Barns framed with timber and walled with boards, appear preferable to those built of stone or brick. The grain will generally thrash out cleaner, and of a brighter colour, from a boarded barn: the air penetrates through all parts of a bay surrounded with boards; they are soon dried by the wind, and warmed by the sun, after rain, and are too close to admit birds; whereas the air-holes left in stone or brick-work, will not exclude them: the air so let in, acts partially: snow and rain also get in at times; the walls are always cold, and frequently damp. The shutters to pitching-holes should slide or fall
down,

down, for when they open as doors, the wind has great power over them, and soon destroys them, if they are not regularly and well fastened. If a recess, level with the thrashing-floor, is formed within the bay, and open to the thrashing-floor, it is convenient to sweep the couch into, and better than heaping up the couch on one side of the thrashing-floor; and the grain that flies in thrashing, falls in this recess, instead of mixing with the unthrashed grain in the bay, or falling to the bottom of it.

To return to farm-houses, from which I have been led, by observing upon the communications relating both to them and out-buildings—I would observe, that in building, or altering smaller farm-houses, it may be advantageous to have a good open fire-place in the brew-house, which will carry off the steam better than any other aperture, and will be useful for cooking; and when the brew-house is not used for brewing, or washing clothes, it will make a dining-room; by which means the kitchen is kept neat and entire, and the necessity of having a parlour is prevented.

In forming farm-yards, the confinement of pigs seems not to have been sufficiently attended to. When pigs are not confined within certain bounds, they are injurious to their owner and to the public. It is very possible to form a pig-yard, that shall admit the pigs to one door of a barn, and to a sufficient range, without giving them an opportunity of wandering along roads, to the inconvenience of all passengers, and the danger of trespass upon the lands adjoining. For an account of Mr. GWILLIAM's ox-house at Purslow, see the article Turnips.

SECT. III.—COTTAGES.

COTTAGES, or houses for labourers and mechanics, have been incidentally mentioned in the last Chapter. In addition to what has been there said, I would premise, as I did with regard to farm-houses, and as I would upon any other subject of civil polity or domestic economy, that general rules are to be cautiously received and sparingly followed; that local situation may make this or that plan the best. For instance, many old houses, especially if framed together with timber, are worth repairing, though their outward appearance may bespeak a great degree of wretchedness or decay; for they can generally be made more comfortable than a new house, and at less expense. I am much more anxious that houses of the description we are speaking of, should be kept in clean and good repair, than to prescribe any particular form. I would only suggest the impropriety of making them, or indeed any other object, bear an outward appearance, intended to contradict their inward use—all castellated or gothicised cottages, all church-like barns, or fort-like pigstyes, I should conceive to be objectionable. They are intended to deceive, and they tell you that they are intended to deceive. It is not pleasant to encourage any thing like deceit; but in these instances, imposition effected is rarely gained; it amounts only to imposition attempted; or, could the deceit succeed, it would only present a prospect with fewer proprieties about it than there really are. Almost every species of country building has a good effect, if properly placed and neatly executed; and what are the least ornamental, or indeed the most disgusting, of their appendages, cease to shock, when supported by the relative situation they stand in;
shewing

shewing their necessity and their use. A dunghill in a farm-fold creates no disagreeable idea, but connected with a Gothic gateway, or embattled tower, it is bad. Cattle protected by the side of a barn, form a picturesque group; but sheltering under a Grecian portico—the impropriety is glaring. Linen hanging to dry on the hedge of a cottage garden, may be passed without displeasure; but the clothes of men, women, and children, surrounding the cell of an anchorite, or the oratory of a monk, have their natural unseemliness increased by the contrast. On the other hand, a fine-dressed lawn with miserable cottages on the outside, may be compared to the laced clothes and dirty linen some foreigners were formerly accused of wearing. The whole of a gentleman's estate should be his pleasure-ground; the village should be one object in the scene; not shut out from it. There may be a little more polish about the mansion, but it should not be an unnatural contrast to the surrounding objects. The face of no country is bad, but as it is disfigured by artificial means; and the cheapest and best improvement is, merely to remove what offends, and to take care that the buildings, or fences, that are wanted, are neat and appropriate, exhibiting distinctly their real intention.

I am, in general, a friend to single cottages, because two families under one roof may have more causes of contention arise between them. On the other hand, in illness, poor persons have frequently the merit of forgetting their differences; and then the assistance they are inclined to give each other, is made more easy by nearness of situation. It is possible, however, where two, or even three houses, are joined together, to contrive the gardens in such a manner, that there shall be little interference; and sometimes three neighbouring families may do better
together

together than two.—The following plan of a cottage I had lately built, I communicated to the Board in the year 1794. The door opens opposite to the jamb of the chimney, to shelter the kitchen fire-place. The chimney is in the middle, to keep the two chambers warm. Neither is a thoroughfare to the other, which should contribute to the more decent education of the children. The gable ends are capable of containing a window each, large enough to admit good light and air; whereas, if the chimney is at the end, the window must be too small, and if it is not in the end, a dormant must break out in the roof, or the walls must be raised an unnecessary height, to get proper room for a window. If the husband is a mechanic, he may have the room next the kitchen for his use; and should he want heated irons, or the use of a fire, for warmth, an iron door in the back of the chimney would cause the same fire to serve both apartments. This use was suggested to me by a friend, who, I think, mentioned it as an idea of Dr. FRANKLIN'S.

It is difficult to give any accurate account of the expense of buildings, where all the materials are not bought, and where the person building may have other works going on, to which and from which the workmen may be called. In one case, the estimate of labour may be erroneous; in the other, it may be difficult to appreciate the stone or the timber. Even where all the materials are bought, the price will differ so much, according to general and local situations, that accuracy may be equally unattainable. The cottage alluded to, cost perhaps 50l.; in other situations, it may have been built for less at the time; but the wages of masons and carpenters have increased since then. It is of stone, except the chimney, which is brick. The cover is of blue slates. It is neatly fitted up on the inside, but a fire-place in the larger bed-room was
unfor-

unfortunately forgotten; and a fire in a bed-room is necessary in times of sickness, and when a woman lies in. The rooms are small, but they may be made larger or less, according to circumstances. Perhaps the price of fuel has some connexion with the size of rooms in small houses. Care, however, should be taken, not to make the bed-rooms so large, that a man with a family can crowd them all into one; because, where this is practicable, they are tempted to forego the advantages of health and decency, intended to be gained by the use of two chambers, and set one of them, either to a constant lodger, or keep it for the occasional tenancy of mendicant strollers, or those of even a worse description. Where cottages are wanted, preparatory to the settlement of a young couple, it is sufficient to build a good kitchen, with a bed-room and pantry, on the same floor; and, should they have a family, add a bed-room at the other end of the kitchen, against the time some of the children should be separated from the others, or from the parents. Where a ground-floor is made perfectly dry, there is a convenience in having the bed-room to open out of the kitchen, because the kitchen-fire is sufficient for the purposes of illness. Food or medicine, can be warmed at it, and an attendant can be kept warm, and near the patient. The bed-room, if dry, will be warmer, as less exposed to the wind, and less liable to be heated from the roof in summer, or chilled from it in winter. Wherever persons are to sleep near a roof, thatch, well ceiled, is the most comfortable, as it preserves the room in an even temperature. Landlords intent on making comfortable cottages, will often find it best to build or repair, before they engage with a tenant; for men, not used to improvements, cannot comprehend effect beforehand; and they will apprehend want of accommodation, without reason, or, oftentimes, if attended to, lose

lose the conveniencies they would have wished; or they will not wish for those it is best they should be indulged in. For instance, windows to open, will not always be desired. I think it perfectly possible to improve men in their turn of mind, by giving them proprieties in and about their habitations, they may not have thought of, or desired. If, upon occupancy, they find a real want of alterations or additions, it will then be time enough to make them. We must not expect to give satisfaction at first, in our attempts to serve the poor; if this object is not undertaken on a principle of duty, it will soon be given up in disgust; for though good sense or good principle are not confined to any station, and though there are men in the lowest situations, with whom the best informed may converse, both with pleasure and improvement; yet in this, as in all human intercourse, there will be found much to endure; and indulgence will as often lead to imposition as to gratitude; and perhaps uneducated persons are the most likely to mistake a disinterested desire of serving them, and to regard it as a proof of weakness rather than benevolence.

Another observation, with regard to cottages, should not be forgotten. The persons living in them, should be tenants to the real landlord, paying a fair annual rent. A cottage, subject only to an amercement, is found by experience, in very many instances, to make the family idle, and the profit from living rent-free, does not compensate the loss by indolence. Of parishes containing different descriptions of labourers, it is the opinion of good men and competent judges, and the same has been lately verified to me in some very strong instances, that cottagers living near commons, and not paying any rent, are generally less comfortable in their habitations, and more chargeable to the parish, than those who live in
I villages,

villages, and pay 50s. or 3l. a year, for a house and garden; but then the labourer should not be tenant to the farmer. When two farms are united, the houses are, often, both left standing, and the farmer finds a tenant or two for the worst house; or he is to be answerable for the rent of cottages adjoining his farm, to save trouble or hazard to the landlord or his agent. In these cases, the landlord or agent look upon the houses as no further concern of theirs: the farmer has not interest enough in them to repair them: the labourer, added to a want of permanent interest also, has not ability: so that these, perhaps, are some of the worst dwellings. It seems very desirable, as a general rule, though any rule may have its exception, that these sub-tenancies were abolished. And they are connected with another evil, that of depriving labourers of the opportunity of renting land. One objection to labourers renting land is, the danger resulting from very small capital, that of an unwise penury. In small farms, we too often see a weak team of horses, insufficient in kind, and insufficiently fed, to do the work properly, either in point of humanity or of interest. So, where land is allowed to keep one cow, if it begets a desire of rearing a second, both may be starved; or the pasturage for one may be contracted by seeking to raise grain upon a part of it, and the deficiency may be supplied, by turning the cow to graze on the ditch-banks of the road. Much, however, of this may be remedied by a landlord's authority. A labourer's fields should be chiefly confined to pasture*, that the care of them may not interfere

* The necessity of this restriction seems very much done away, by the account of "a cottager keeping a cow, by the produce of arable land only," printed in the 18th Report of the Society for bettering the Condition of the Poor. No. XIV. of the appendix, p. 79 of that Report, contains a copy of a letter

terfere with his working for hire. The number of acres necessary, will depend upon the nature of the land. I have not found six acres to interfere at all materially with a labourer's work; and if he is fit to be trusted with land at all, he should have at least three acres, where the situation of his house will admit of so much; for unless the ground joins the house, it cannot be looked after without loss of time; and it will generally prove a nuisance to the neighbours, or the public. In addition to the situation of a cottage, the tenant's character and circumstances must be well considered. Where it is not convenient or advisable to let him have land enough for a cow, he may have a large garden, and the necessary and pig-stye should be so placed, that the soak from them may be directed to manure the soil. The pig-stye should have a small court, to open into the garden only. When a pig is bought, it is small, and can be carried to the stye, where it may remain. I have found this the only way of preventing the labourer's pigs from wandering about a village. If the stye opens to a road, it will never be so well guarded as when the first act of trespass must be in the owner's garden. I am truly anxious, however, under all proper restriction and limitations, of advancing and recommending the practice of setting some land to labourers and country mechanics. It appears to me important, both in a moral and political point of view. Let us consider, in the first place, the probable effects of such

letter from Sir HENRY VAVASOUR, of Yorkshire, to Lord CARRINGTON, stating the fact of THOMAS ROOK, a tenant to Sir HENRY, who, upon three acres of land, either digged or ploughed, and cropped alternately with grain, clover, potatoes, carrots, and turnips, supports two cows and two pigs. He works generally as a day-labourer for hire, cultivating his own three acres principally at *spare* hours, and with such success, that he thinks he makes an average profit, one year with another, of about 10l. per ann. after paying 9l. per year, for his house and ground.

situations being more easily attained. Would not farming servants, both men and women, have an additional motive to be careful, and seek after matrimonial, instead of illegal, engagements, if they knew that, when they could save money enough to buy a bed, a pig, and a cow, they might settle and have a house and land, for which they could afford to pay rent, and from which they could hope to maintain themselves and rear a family? Or, if they have not money enough to buy in all their stock at first, they may raise potatoes in one year, sufficient to increase their capital. Let us now consider them placed in their cottage. The care of the land is not sufficient to take the labourer off from a single day's work; but when it is six o'clock in the evening, he has an interest in going directly home, to see that his fences are in repair, or to dig a part of his garden, &c.: he knows too, that when he has done this (or, if the weather is too bad for him to remain out of doors, still he knows), that his house is warm, and that his supper is preparing; for his wife has been at home the whole day, looking occasionally after the cow, feeding the pig, weeding in the garden, or spinning in the house. As her family grows up, she can put the elder children to do some of these things; but if the woman goes out to work, the children are neglected, and the house is cold and comfortless; and the husband has a temptation to go to the ale-house (though this evil is much lessened, from the high price of necessaries, and, in some districts, from the reduced number of public-houses). Before men can be made good, they must be made serious; and this is best done by giving them an idea of property. From being serious, there is a chance of their becoming good members of society through principle, but if not, they may be harmless through interest; and we cannot conceive a stronger support to the police of any country, than

than the householders of it having business of their own to mind, and property of their own to defend. Though the rent of a cottage is generally an inadequate interest for the money spent in building or repairing it, yet the tenant is frequently willing to pay a higher proportionate rent per acre for land than the farmer does, and he is also frequently the most punctual in the payment of his rent. But, however the balance may be in other respects, one considerable advantage will always be derived from the extension of this plan, in the reduction of the poor's-rate. If, indeed, the 31 ELIZ. c. 7, could have been acted upon, or modified, rather than repealed, it may have prevented the expense of poor's-rates in country parishes. It prohibited the building of any cottages in the country, unless there be set four acres of land, lying near the same, to be continually occupied therewith, &c. &c.

I have the pleasure of adding the following extract from a letter, written to me January 29, 1796, in answer to an inquiry, by the Rev. ARCHIBALD ALISON, Rector of Kenley, in this county, the facts of which will best bespeak the merit of its author:—"With regard to the experiment in this parish, it is much too trifling and too recent to deserve any attention. Thirty acres, you know, were allotted to me in the division of the common, and they were divided into ten shares, to accommodate the poor people of the common who had the largest families, at the same rent that was paid for the other part. It is only three years since this took place, and I can say little, therefore, with respect to the effects I most wished to follow from it. That it has added to the comfort of the people in that time, I have every reason to believe, both from their own acknowledgments, and from the anxiety of the rest to possess the same advantages. I think I may say also, that

it has added, in some measure, to their industry. The land in general is in a better state than any of that which was enclosed at the same time. The poorest among them have all carried lime, collected road-stuff, burnt weeds, &c. and some of them have certainly manured higher than any of the farmers in our parish. Two of them have built cottages at their own expense, and shewn a little disposition to ornament, by white-washing them, &c. In so short a time, these are, at least, not unpromising appearances. With regard to the quantity of land which may be allotted to cottagers, without diminishing their industry as day-labourers, it will not be easy to determine. If I was to judge from this parish, I should be disposed to think that more than three acres might very safely be given. The most decent, industrious, and well-doing of the lower people among us, are four or five families, who have from five to eight, or ten acres a-piece. This does not prevent them from working constantly either as labourers or in their trades. They have brought up families without any parish assistance, and their children are in general better educated, better behaved, and set out better in the world, than any others of the same rank among us. These little farms, indeed, are always in grass, as I apprehend they will always naturally be, when not exceeding these limits. The smaller farmers with us, of from 20 to 30 acres, who are induced to keep something like a team, are much the poorest and most wretched people among us."

To this account I must add what Mr. ALISON's delicacy has concealed, that in setting these allotments at the current price, viz. 7s. per acre, he promised not to raise that rent in consequence of any improvements the original tenants may make, which would have the operation of a lease for the time of his incumbency. A farther promise also was
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holden out, that a jury of farmers should look over the ten allotments annually, and he who had improved the most should be excused paying rent for that year. It should be noted also, that lime is within a few miles of these cottages.

I have the advantage of a further communication upon this subject, from EDWARD HARRIES, Esq. of Arlescot, in this county.

Mr. HARRIES's experience as an active and attentive landlord, of very considerable property, makes his observations on husbandry very valuable; and they have peculiar weight on this part of the subject, from the kindness and consideration with which he treats his labourers:—"The building should be of a dimension to allow two separate chambers. An acre of ground annexed to it, would admit of half being annually sown with wheat, the other half with hemp, potatoes, cabbages and beans: these would be a great assistance to the labourer in the support of his family; would enable him to keep and fat a pig. His situation would be still more comfortable if five acres of land were added to it, as he could then keep a cow, and somewhat increase his quantity of grain. A double cottage I would generally recommend; there is some saving in the erection, and they may mutually assist each other, for though violent quarrels sometimes arise between such near neighbours, yet reciprocal interest soon occasions a forgetfulness of past offences. I think there are more small habitations of this kind in our county, than in any other within my observation. There should be at least two cottages to every 100 acres. The situation open to a public road, dry, and south, or south-east."

CHAP. IV.

MODE OF OCCUPATION.

 SECT. I.—SIZE OF FARMS. CHARACTER OF
THE FARMERS.

“ THE sizes of the farms in this county are very various; from that of one to 500 acres on the east side of the county, to the little farm of 20 acres on the borders of Wales* :” and even there, viz. on the west side of the county, are several farms as large as most in the east district; and the size has increased in all parts of the county, two, three, or four farms being put into one, though there are a few instances of large farms being again subdivided. There is a use, perhaps, in farms of all common sizes, so far as they are extended, at least in this county. The small farmer, for instance, brings his grain early to market, and the large farmer’s hoard may prevent scarcity. In favour of large farms, it may be said, that provided the undertaking is not too large for one person to direct its proper cultivation, that cultivation is managed with a less number of horses, and there is only one family to be maintained, independent of the necessary hands; hence greater produce is raised in proportion to the mouths to be fed by it, and that produce must, from the same circumstance, come cheaper to market (unless its being in fewer hands

* Original Report.

should make monopoly more easy). If, as farms are increased in size, or in number, by the enclosure of waste lands, cottages are built in proportion to the extra cultivation required, so that the number of married labourers should be increased, rather than that of household servants, a population would be gained capable of making the whole kingdom more productive; and in proportion as this extra cultivation is aided by a better and more compendious system of farming, an increase of produce to the means used, would be progressively taking place, whence a greater proportion both of the necessities and comforts of life should be the lot of all; as a greater variety of conveniences upon still lower and lower terms, have been successively offered, from the assistance given by art to labour in the various manufactures that are carried on. But there is one restriction that should be especially attended to in the setting of large farms. They should not, even now that we want to get waste lands cultivated, be larger than the abilities of the farmer in question can in some measure direct, or than his capital can force into decent cultivation. Small sums of money are more easily employed in trade than in agriculture: the return is surer, quicker, and generally greater; on this account the commercial capital preponderates; and in the present state of this kingdom the object is, *how much land* can be cultivated to some advantage with the present farming capital? If agriculture flourishes, and the waste lands become farms, the reverse of this will, in the natural course of things, be the case; and it will be for posterity to see, on *how small a quantity of land* a given capital can be beneficially employed. As a general position, I should think that a large number of our farms are managed with too little capital, on any other idea than that of forcing cultivation forward with the strength we have. I am happy
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in being able to give a value to this Section, by some further observations that Mr. HARRIES has favoured me with. "The size of our farms are as various as our soil and surface. Many small tenements, to which are annexed from five to twenty acres, till they arise to an extent to enable the occupier to keep a plough-team, can hardly be denominated a farm. I think four, five, or six acres annexed to a comfortable cottage, to keep a cow and two pigs, and an acre or two to be ploughed by the employer of the labourer, I could wish to see more frequent than they are; but from that size, till there is sufficient to employ regularly a plough-team, I consider to be unprofitable to the occupier and the community; they are above being labourers, and for want of horses to work their lands, they are in a neglected state, and the occupiers needy. Less than three horses will not do to cultivate a farm; and to keep them regularly employed, there should be 30 or 40 acres of tillage land, and nearly as much in meadow and pasture. The generality of farms rise from 50 to 200 acres; we have a few from 200 to 500 or 600 acres: it is a pretty general practice to enlarge them. In the last thirty years the number of our farms may have diminished one third. I look upon a farm of 100 to 200 acres as desirable for the occupier and the community, as any that can be fixed upon; upon these he keeps from four to six horses: about 160 acres is a quantity well adapted for five horses, which are considered as sufficient for a waggoner and ploughboy to look after: it is strength sufficient to work the strongest lands, to break up leys, to draw manure, to work two pair of harrows, to keep three waggons at work in getting in harvest. Five horses will prepare 60 or 70 acres for grain, and do the other business belonging to 160 acres. Large farms, where the occupier has abilities and capital, are the most profitable,
or

or where entire new erections are to be made, are the most so to the owner; but where they are already built upon, I believe the owner will obtain a larger rent, and have his lands cultivated with more neatness, from the size I have recommended; he will attend to several minutiae that the large farmer neglects: it renders an independent situation for a greater number of families, and of that description of people so desirable to a state."

The scope of Shropshire farming is perhaps less confined than that of many other counties. The farms, generally speaking, are arable, grazing, for hay, for the dairy, rearing, and feeding. There are some pigs, some sheep, some colts; though the proportion of these several objects varies from situation. As to further marks of character, they are probably as various as man. The slothful and the industrious; the indolent and the enterprising; the hard-hearted and the benevolent—may be in the same proportion as in other counties, under the same degree of improvement; for the dread of innovation, or the aversion to experiment, subside, as the profit of new systems is felt, or the advantages of practiced skill are perceived; and how far the spirit of improvement is introduced, it is the purport of the different Sections to explain*. In all parts of this county, examples of superior husbandry may be met with. There are few breeds of cattle, or few mechanical improvements, but what may be found within

* "The Shropshire farmers, in general, are very industrious. There are few of them but what work hard along with their servants. Their grain is generally extremely well cleaned for market. In the women's department, in the farm-houses, there seems to be a greater exertion of industry than I have remarked in most other counties. Besides brewing, baking, providing for the family, where workmen are maintained in the house, and managing the dairy, the farmer's wife, with the assistance of her maid-servants, in the evenings, and at spare hours, carries on a little manufacture, and gets up a piece of linen cloth for sale, every year."—*Mr. Price.*

the county. Several gentlemen, as well as farmers, have gone to great expense in importing them from other counties. And perhaps where, from natural causes, the husbandry is the worst, there is the greatest local collection of both. I mean the succession of improved breeds, and of improved farming instruments, that have been, and are, at Kinlet-hall, situated between Bridgnorth and Cleobury Mortimer. The immediate neighbourhood appears to have improved by the example set, and the information communicated to them. And if the eastern district of the county is in general better cultivated than any other spots of equal size, it must be recollected, that it is nearer to an improved part of the kingdom: the soil is more easily managed, from its lightness, because less strength is necessary to plough with, more seasons are suitable to work in, and there is less occasion for draining. So that want of capital would be sooner gotten over, because less capital could make such a beginning as would procure its increase. In the southern district the roads are exceedingly bad, and there is no public exigency to force their amendment, so that the farmers must in a great measure make them better, or continue to procure with difficulty the coal and lime with which their district abounds; but in the eastern district, the county is more favourable to good roads, and its being in the line of communication between the general and particular metropolis, and between many manufactures, the farmers have better roads for drawing coal and manure to their farms, and for sending their grain to market; and this, indeed, now aided and aiding by navigable canals. Many of these circumstances apply to the whole north side of the Severn. In the S. W. district, the roads, though sound, have much hilly land to go over, and coal and lime are at a distance. But in any situation, exertion will produce an effect:

effect: in the western district there have been more resident landlords to set an example; the management of the Walcot property has been very beneficial, and the cultivation of turnips upon Lord CLIVE's different estates has been encouraged by the annual distribution of six silver cups, varying in value from 16 guineas to 4 guineas, viz.

A cup of 16 guineas, for the best 25 acres of well-hoed turnips;

A cup of 8 guineas, for the second best ditto;

A cup of 10 guineas, for the best 15 acres ditto;

A cup of 5 guineas, for the second best ditto;

A cup of 8 guineas, for the best 8 acres ditto;

A cup of 4 guineas, for the second best ditto.

There is one habit, which, though not peculiar probably to Shropshire farmers, should be pointed out as very pernicious to them. I mean the accustomed quantity of strong malt-liquor that is drank by them; or, perhaps, of punch, wine, or other spirits, at the ordinaries or entertainments of the more affluent. I do not mean to say, there are not very many sober farmers, or that sobriety will always ensure old age, or that very opposite characters do not sometimes reach an advanced period of life; but the question is, whether the complaints, and premature old age, of many farmers, do not arise from what may be called an habitual intemperance, rather than drunkenness perhaps? Any great degree of strong liquor is most unfriendly, I believe, to those who are exposed to sudden and frequent vicissitudes of heat and cold, of wet and dry weather. The remarks that follow, the late Mr. LLOYD, of Aston, favoured me with: "Farmers in Shropshire, particularly in the N. W. parts, have been too much tempted and detached from agriculture, to carry for hire on the road. The profit, at first sight, has appeared enormously great, and

and few have found their error before it has been too late to withdraw. The consequences have been as follows: the farmer has made a contract wherever he could obtain one, which of necessity he has been obliged to make good. His farm has been sowed late, with *fewer ploughings than requisite, and with less manure*, because he could not spare time from his other employments. As he usually carries by *weight*, he overloads his horses: from the double business of road and farm, they are worked beyond their strength, and soon begin to contract diseases from ill-treatment, the certain forerunner of their approaching death; for their masters cannot afford to allow them any rest to recover, in case of illness. The horses being seldom at home, it necessarily follows, that the hay they eat (though raised upon the farm), can never return to it in the shape of manure. The farmer being usually with his team, contracts an habit of living away from his family, and of spending his leisure time in public-houses, where, from meeting with dissipated company, he takes to drink and to neglect his business. The consequence is obvious. I have known many instances of the above. I hope the canal will in a great measure remedy this evil, and be the means of farmers keeping fewer horses, and of their employing oxen in their stead."—Mr. WILLIAM FLAVEL, of Alberbury, observes, in the margin of a Report returned to the Board, "I am of opinion that landlords are chiefly in fault respecting ill husbandry, by not paying that attention to the management of their estates as they ought to do, and making a proper distinction between good and bad farmers."

SECT. II.—RENT.

“THE average price of land per acre may be about 15s. titheable*.”

Land is measured by the statute acre, and it varies from 8s. or less per acre, to 12s. in districts where the roads are bad, and where the landlord has not interested himself in the improvement of his estate, or where the agent has gone on in the beaten track of superintendence: and from 15s. to 20s. per acre and more, the farm together, in more favourable situations. Near towns land lets from 2l. to 6l. an acre; and in the manufacturing parts of the county small parcels of land also let high. In old leases, reserves were made of a day's ploughing, or of some days work in the harvest; some poultry at Christmas; the keep of fighting cocks, or of dogs; but I do not know that any such stipulations are now inserted or made. The rack-tenants of a sporting landlord are frequently subject to the inconvenience of keeping dogs; and rack-tenants are in many places expected to draw a load or a certain number of loads of coal annually.

In consequence of the high price of grain in the winter of the year 1795, Mr. REYNOLDS, of Coalbrookdale, favoured me with the following idea; and his sentiments will, I am sure, be read with respect by those who know him:—“I had a thought which I communicated to the Marquis of STAFFORD, many of whose farms are, I apprehend, out of lease, and more coming out frequently; and he appeared to think it feasible, and that was, that gentlemen should reserve an option to receive their rents in corn, at a price per bushel proportionable to the value of

* Original Report:

the land. This, I think, would have a good effect on the price and quantity, enable gentlemen to sell to the poor at a moderate rate, without lessening their incomes, and at the worst, enable them to share the extra profits with their tenants, and prevent those disturbances which originate in an artificial, and not a real scarcity. From the best information which I can obtain, a farmer who pays 20s. an acre can well afford to sell wheat at 7s. per bushel, and the proportion would be easily fixed for barley, &c. This is only an hint, and I had not time to enlarge upon it, if I were better qualified. Do not the Universities set their lands by such a mode, though perhaps without availing themselves of it, further than to secure an income proportionable at all times to the value of money, for the purposes for which they were endowed with the possessions?"

SECT. III.—TITHES.

VERY little tithe is gathered. In the archdeaconry of Salop, in Hereford diocese, somewhat above one half of the land pays tithe to the parochial clergy; but as the rectories therein are above double the number of vicarages, and almost double the other churches, and as the rectories throughout England exceed the vicarages by somewhat more than one-fifth only, and the other churches by somewhat more than two-fifths only, it may be presumed that scarcely half the land of the kingdom pays tithe to the church. The average of the compositions for tithes in this county, does not, perhaps, exceed the tithe of the rent, or 2s. in the pound. A few extreme cases may be pointed out, and such instances will be talked of; but, again, there are other instances below the average mentioned.

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SECT. IV.—POOR-RATES.

It is difficult to give a distinct view of the comparative pressure of poor-rates to the value of property, because in many parishes the rate is made according to an old valuation; and where there is a new valuation, it is frequently equalized upon a scale below the amount of the full value. For instance, the person or persons valuing, estimate, in the first instance, the real income that each estate should bring in, and then return two-thirds, three-fifths, or seven-tenths of such real amount, as the rent at which an assessment shall be made. I do not see the use of this secret ground-work of a rate; it may possibly help to abate the cavils of troublesome men, or puzzle them in their endeavours to find fault with an assessment; yet the open way of making it, according to the full computed value, would, upon the whole, give more satisfaction, as well as being strictly proper. It is very obvious, as the Original Report expresses it, that “the poor-rates are very various, and have been enormously increased of late years.” Mr. BISHTON further states, that “in his parish, which has no tradesmen in it, the poor-rates have been raised from 25l. to 100l. per annum, within 30 years:” and I should think this may be taken as no improbable average, at the date of his Report. I say this with more confidence, from looking at notes I made in the parochial visitations of my archdeaconry (in the years 1793 and 1794 principally). The late seasons, and even that of 1795 and 1796, must have made a great alteration, from the extra price of all articles of food. Near the time Mr. BISHTON wrote his Report, I met with extreme instances of the rate having risen from $3\frac{1}{2}$ d. in the pound upon an old valuation, to 3s. upon the same valuation within memory;

and from 8d. in the pound to 2s. within 13 years: but I met with a few instances where the rate had rather declined, and several where the advance in the last 20 years had not been very considerable. It should be recollected, however, that in this county, the county-rate, which is paid out of the poor's-rate, has been very high, from the circumstances of an extensive gaol and county-hall having been built, with several handsome bridges, within the said period of 30 years; thus, in one parish, the poor's-rate raised in the year 1723 was 5l. 3s. 8d.; in the year 1773, 15l. 17s. 3d., and in 1792, 31l. 13s. 2d.; but in the last year, what they call the vagrant-money, *i. e.* the quota to the county-rates was 12l., which in some former years may not have been more than 1l. Upon the same ground as I state Mr. BISHTON's instance of the rise of a poor-rate to be nearly an average instance, I venture to support Mr. HARRIES's opinion, and that of Mr. BOWMAN, a respectable land-agent, who have separately stated the poor's-rate to be from 1s. to 2s. 6d. in the pound, according to the real value. This also must be taken as relating to the years immediately preceding the temporary advance of 1795, or rather 1796. Mr. BOWMAN, in the Report he returned to the Board, observed, "The poor's-rates in the N.W. part of the county vary from 1s. to 2s. 6d. in the pound rack-rent, mostly from 18d. to 21d. The town of Oswestry has paid much more. There is very little that comes under the title of manufactory, in that part of the county. There is a house of industry erected near Oswestry, at the expense of that town and twelve united parishes, for the better relief and employment of the poor belonging thereto, on a plan similar to that at Shrewsbury. It is hoped this institution will reduce the poor's-rates in some degree; however, it will, at all events (under good manage-

management) operate against their advancing, and will bring up the young poor in habits of industry. The house was opened in May, 1794."

Mr. HARRIES, in the communications he favoured me with, 1796, observes, "Till the late high price of grain the parish-rates may have been from 1s. to 2s. 6d. per pound full value. It is almost invariable, that the smaller the parish the easier the rate. In addition to the house of industry at Shrewsbury, there has been one lately erected at Ellesmere, including several adjoining parishes; another at Oswestry, and again at four miles from Shrewsbury, including several parishes. Great part of the hundred of Chirbury has united itself to a house of industry between Pool and Montgomery. As the houses of industry (except Shrewsbury) are new institutions, we cannot form any accurate judgment of the advantage or disadvantages of them. Many public expenses are now defrayed out of the poor's-rates, to the amount of perhaps one-third of the rate."

The desire that every person, who thinks fairly on the subject, must have, of seeing all his fellow-creatures who are grown up and settled in life, happy in a habitation suitable to their condition, makes houses of industry, at first view, objects of some suspicion. But when it is considered how many poor persons cannot procure comfortable houses; how many will not keep those clean or decent that they have; how many will not make the best of their lot by industry; and how many will not take care of the education of their children: when all these circumstances are considered, we become reconciled to institutions that force cleanliness upon those who are dirty; and wholesome food upon those of depraved appetites. In these houses, when properly conducted, some labour is procured from the indolent who are within, and an additional incitement given

to the industry of those who are without: and the education of the children is uniformly better than they would probably have had, even from better parents, out of the house. These considerations should not slacken our endeavours to prevent the necessity of such receptacles. Every argument that can be brought in their favour, is an additional motive for attending to the comforts of the labouring class, and for encouraging them in right behaviour: but whilst the present want of education, and of proper disposition in so many of this class continues, we cannot regret that such fabrics have, in many instances, been built or furnished. Those in this county are very handsome structures, and are, more or less, well administered. Towns are more favourable to their due inspection, and by proper persons, than country situations. That at Shrewsbury, perhaps, stands unrivalled, and particular accounts of it have been published by Mr. ISAAC WOOD, one of its earliest directors, and to whom the poor, and the parishes connected with it, are under great obligations. I am sorry to add, that by too eager an attention to the welfare of his fellow-creatures, they are deprived of his services. He died of a fever caught in a long attendance at the Shrewsbury house of industry, January 15, 1801. I believe the directors of the houses of industry in this county are, in general, liberal to families wanting temporary relief, permitting them, and in many cases those requiring permanent assistance, to remain in their own dwellings. It is necessary these incorporations should have a considerable degree of independence; still care should be taken that they are not entirely removed from the control of the magistrate. The more I consider the existing poor laws, the less I am convinced of the propriety of the outcry that has been against them. In this, as in many other instances, the complaint may be brought home rather to the want of a due administration

stration of the law, than of the law itself. The provisions of the legislature in the time of Queen ELIZABETH are certainly so far wise, that relief may be given to the poor under them, in every possible case of distress. This then is one grand principle of an act to prevent absolute want. That worthy objects should not obtain their due proportion, or that unworthy ones should be able to procure too large a share, is not to be wondered at. Laws can rarely be framed so as to execute themselves. They must be put in force by men, subject, more or less, to the infirmities of our nature; and, independent of this general obstruction to the effect of the wisest regulations, there are peculiar sources of perplexity belonging to the management of the poor.

The office of overseer is generally an annual office; though magistrates have a discretion in sanctioning the appointment, they can rarely do more than object to notorious characters, if there is no appeal against the parish return; and the parish return is generally that of indiscriminate rotation, among all those whose occupations render them liable to the office. These laws then are intrusted, in the first instance, to every diversity of temper and ability: to every degree of inexperience and self-interest. In large parishes, the office does not return to the same person above once or twice in his life. In a large parish, an annual overseer cannot become acquainted with the real situation of all the poor persons belonging to it, many of whom are dwelling out of the parish. An annual overseer has always his own business to attend to, and therefore may feel irritated, or injured, so often as he is called off from it; and hence the concerns of the poor are liable to be less kindly and patiently investigated. What Mr. HARRIES has observed, of the rate being uniformly lowest in small parishes, is not only very true, but I doubt not, that all the real poor of small parishes are

best provided for. The knowledge that each individual in a small parish generally has of every other, not only reveals the merit of the deserving, and prevents imposition from undeserving objects, but the publicity arising from it tends to encourage industry, and check vice. Parishes of a moderate size, effect in a great degree the benefit of the Saxon frankpledge; and though they have distant parishioners, yet the number being few, it is easier to make inquiry into their situations; and the power of withholding relief from a non-resident parishioner, I look upon as a salutary check upon his conduct. The least liberal parishes will always afford him temporary relief rather than compel his return to them, if they cannot afford him equal opportunities of gaining a livelihood, to those he enjoys at a distance; and if they can afford him equal opportunities, the exchange will be for his good; for his own conduct will be more correct under the eye of those who are to support him, should he stand in need; and occasional kindnesses will be less scrupulously afforded him among those upon whom he has an eventual claim, than among strangers. There are two ways in which the benefits resulting from small parishes may be in part obtained, and instances of either mode may be met with. The one is appointing separate overseers to separate townships of a large parish; and if this plan is sufficiently extended, and a separate and independent rate made and collected for each township, great good will be done. The other is devolving the whole management upon one overseer, who shall be annually appointed, and who shall receive a sufficient salary to make him regard the office his business, as well as his duty. I have known great advantages result to the parishioners and the poor of a large parish, by thus furnishing them with at least leisure and experience, and such a portion of ability as they can procure, in the person of their acting officer. But the magistrates of the country
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are also parties to the poor-laws ; and with great gratitude for the services that magistrates render to society, still it may be observed, that in some districts there are few who will undertake this unthankful burthen, and that in others it necessarily falls to those who have not leisure for doing all that magistrates may do. The salutary power of a country magistrate, who has time, fortune, and, inclination, is incalculable. I will only mention further, that one distinct cause of the rise of poor's-rates, previous to that from the high price of provisions, was the increase of illegitimate children. The extension of comfortable cottages, as mentioned in a former Section, besides its other tendencies to lowering the poor's-rates, will affect this by its promotion of marriage among labourers ; but the increased size of farms, where they are principally cultivated by household servants, does certainly tend to increase the number of illegitimate children. The most beneficial remedies to any grievance, will generally lie beyond the reach of legislative jurisdiction. The law does already protect the poor from absolute want ; but if the connexions of landlord and tenant, and of employer and labourer, were more carefully considered, both the landlord and the employer may afford so many little conveniencies to the poor, so connected with them, as to do away much of the necessity for parochial relief.

SECT. V.—LEASES.

LEASES for lives, or for a single life, were more common than they are now ; though some very considerable proprietors have, at no great distance of time, leased farms for the term of the tenant's life. Sometimes a farmer has made a fortune by a beneficial lease ; but it has more

happened that he has hurt the land and himself, by the indolence it has given rise to. One very considerable estate, set on leases for three lives, did not produce, a few years ago, more than one-tenth of the annual value to the landlord; and many of the farms so conditioned, and of the roads near them, appear worse managed than those in the neighbourhood that have not been in lease. One gentleman of this county set leases for 21 years certain, and for seven years more, at the option of the lessor. This was meant as a check against the tenant's impoverishing the land in the last years of his absolute term; at the end of which the lessor meant to part with him, or come to a new agreement for 21 years, with the threat of seven years beyond it, for which he might be obliged to hold it, had he treated it improperly. Thus, he could not hurt his landlord without hurting himself more. The propriety of leases, like many other things, depends upon circumstances; therefore no general rule can well be given, advising their use or disuse. Where neither a landlord nor his agent take any interest in the cultivation of an estate, or where the landlord is not willing to lay out money in improvements or repairs, the tenant cannot be expected to cultivate a farm to any advantage without the security of a lease; and where there is no confidence between landlord and tenant, the insertion of restrictions, or the prescription of a mode of culture, may also be necessary. Though proprietors in general do not like to grant leases, there are few instances of their using their power of dismissal capriciously; and again, fixing permanently the management of any farm, when no farm can be managed in the best possible manner, independent of almost daily attention to the weather and the progress of the seasons, may be injurious to a tenant, if rigorously adhered to. Where a landlord, by himself
or

or agent, studies his own estate ; and where the size and various branches of it are not too great to be understood thoroughly, a tenancy from year to year, unfettered by any restrictions, further than that of good husbandry, required by the law of the land, is perhaps best for both parties.

“ Leases have of late years been much exploded by gentlemen of landed property, many of whom having formerly granted excessive long terms, have been induced, by the injury sustained thereby, and some other reasons, to object to any lease. This is a contrary extreme, and to obviate that difficulty, I have formed a lease (a copy of which is sent to the Honourable Board), which has been so fortunate as to meet with the approbation of both landlord and tenants in general : the former being left in some degree at liberty, and the latter made confident of having an allowance for their improvements, from which they may not have had a proper return of profit before they were compelled to quit*.”

“ Mr. BISHTON, of Kilsall, has taken great pains to prepare printed leases, which I have found to answer very well : the term he recommends, seven, fourteen, or twenty-one years : by being printed, the farmer can read them at leisure †.”

“ The nature of leases are various, for seven, fourteen, or twenty-one years, specifying a limited quantity of land for the tenant to plough, confining him to draw a certain quantity of manure, and sometimes confining the tenant to expend all the fodder on the lands ; though few leases are now granted. Farmers would be more spirited if they had leases §.”

* Original Report.

† The late Mr. LLOYD, of Aston.
§ Mr. TENCH.

“ Some

“Some tenants have leases for years; generally for twenty-one, and there are others for lives, mostly for three, which I look upon to be preferable to any other, both for landlord and tenant *.”

SECT. VI.—EXPENSES.

“THE prices of labour are various in this county, according to its population. In the east part, where I inhabit, it has been, for twenty years, the custom to give a constant labourer 7s. per week through the year, with the addition of what is equal to about 2s. a week more, in the harvest quarter; but the custom much prevails now, of letting a great part of the work to the labourers, particularly thrashing, by which a good hand will generally earn 1s. 6d. per day, and some much more. The allowance of beer, in this county, both winter and summer, is generally given to those who take their work; in the winter three quarts each; in summer four; and in harvest from five to eight quarts of strong and small beer. This customary allowance is excessive; but there are few parts of England where the harvest is got in with such spirit and expedition; but the custom of such excessive drinking ought to be checked, and has been done in the best governed families. The prices of provisions vary a little, according to the population, but the canals will regulate that very much. The returns made to government will best shew the general prices of grain, &c. The whole country is plentifully supplied with coals, from 4s. to 6s. per ton at the pits †.”

It is unnecessary to add, that prices are increased

* Mr. WILLIAM FLAVELL.

† Original Report, 1794.

since

since Mr. BISHTON's Report; but as they have been influenced by temporary circumstances, it seems also unnecessary to detail them. Coals have risen, from the price of labour, at the pits Mr. BISHTON alludes to; but both then and now, coals cost at other pits 8s. and 10s. per ton.

“The President of the Board of Agriculture having desired information respecting the county of Salop, many of our practical farmers were willing to hope that it would be in their power, by diligent inquiry, to make some useful observations on every part of the subject. They were well aware that perfect accuracy could not be expected, and that many of the questions will not admit of an exact solution; because variations are continually arising from the difference of seasons, the fluctuation of markets, and from other incidental circumstances. But on some of the questions we can scarcely hazard a conjecture. Most of our farmers keep no accounts of profits and expenses. Many in this neighbourhood (the Brown Clee Hill), are incapable of keeping them; and few are willing to venture calculations on those branches of husbandry, which they continually observe to be in a state of uncertainty *.”

“At present (about 1795) I give my labourers 14d. a day all the year; when the hay-harvest commences, I allow them meat and drink until the end of corn-harvest. I allow each man two quarts of small beer till harvest, and then six quarts each of harvest beer, exclusive of small beer at meals. I agree with my workmen to thrash most of the wheat and barley by task, at 6s. the score wheat, and 3s. the score barley.

“N. B.—The harvest beer is one bushel of malt to eleven gallons, which is always brewed in October †.”

“The rate of wages is from 6l. to 9l. per annum; price

* Rev. Mr. ROWLEY.

† Mr. FLAYELL, Alberbury.

of labour, from the close of corn-harvest till hay-harvest following, 1s. 2d. per day, and two quarts of beer; though much wheat is set to thrash at 6s. per score, thirty-eight quarts to the bushel, with two quarts of beer per day, and barley at 3s. per score; during the hay-harvest the price of labour is 1s. 6d. per day, with six quarts of beer; but a considerable quantity of hay is set to mow at 1s. 10d. per acre, with six quarts of beer; for the corn-harvest the price of labour is from 9s. to 12s. per week, with meat and beer, though great part of the wheat is set to reap at 5s. per acre, with meat and beer. From the close of corn-harvest, till hay-harvest following, labour begins at six in the morning, and ends at six at night; and when hay-harvest commences, from five in the morning till seven or eight at night; and during the corn-harvest from daylight till night *."

It may be said, in general, that no farmers are at more expense than those of this county, both in the allowance of malt liquor, which is not known in many counties, and from their horse-teams. If they would use more oxen, and plough with fewer horses, they would be able to gain more for themselves, and pay a better rent for their lands.

* Mr. TENCH, 1795.

CHAP. V.

IMPLEMENTS.

USEFUL INSTRUMENTS IN HUSBANDRY.

“ IN the strong lands four or five horses are used to a plough, or six or eight oxen ; the oxen are preferred for ploughing in the strong lands, but horses for the road business ; that being the case, horses are best adapted for small farms, as oxen are for ploughing upon large ones. The single plough, with two wheels under the fore end of the beam, is the best sort of plough for level land, and almost in general use in the turnip soils ; two horses, either coupled, or at length, with a boy, plough an acre and a half per day with ease*.”

“ Double ploughs with wheels, single ploughs with and without wheels, waggons, tumbrels, carts, and other implements of husbandry, are so various, that it is almost an impossibility to describe them accurately, but nearly the same as are used in the adjacent counties†.”

Several thrashing machines have been erected in different parts of this county, but as they are not indigenous, as there is nothing original to compare them with, and as a written account would convey but an imperfect explanation, there seems no propriety in giving a description of them. They differ in construction, so that persons willing

* Original Report.

† Mr. TENCH.

to avail themselves of the invention should look at several, that they may judge of their comparative merits. Specimens of many other improved instruments may be met with at some or other of the capital farmers, or at the gentlemen's houses who patronize agriculture, and perhaps most may be seen at Kinlet-Hall; and the blacksmith near there has some experience in making the more uncommon sorts. Mr. ARTHUR YOUNG did me the favour of procuring for me an improved Suffolk swing-plough, made by the blacksmith he employs*. I think it superior to those of this county, in having a larger shell-board, without being heavier, and by which means it will turn a wider furrow, and lay it neater, than the single wheel-ploughs with a small shell-board, which seem the favourites in this county. The Suffolk plough, on account of its straight beam, should be used with cattle in pairs; and as they are not accustomed to go abreast in this part of the county, it is difficult to give the Suffolk plough a fair trial. I believe swing-ploughs are more used than those with wheels. I am much convinced of the truth of an observation I have heard, I think from Lord SOMERVILLE, that swing-ploughs are best for skilful ploughmen, but that those of moderate skill will use a wheel-plough to more advantage. Some ox-teams are used with gearing, and some with yokes; I think the work is generally done with half the number of oxen, when they go single in gears, than when they are yoked double.

Wheat, in general, is reaped with broad hooks, or saw sickles. Barley and oats are mowed. Pease are cut up or *bagged* with a bill or *bagging* hook. In some places wheat is mowed; and I would recommend doing so when

* Mr. POOLE, of Atcham, near Shrewsbury, has made some ploughs from this model.

the necessary roundness of the ridges or *buts* does not prevent it, and where the land is clean. In a wet year, if there is grass, or weeds are among the straw, it may be dangerous to mow it. A man will mow an acre of wheat with less fatigue than he can reap half an acre; and if he has one assistant to place, another to gather, and another to bind, he will do more work in a day than two reapers with two assistants, and the labour will be less fatiguing, and a great deal of straw is gotten by this means: a cradle should always be put upon the scythe when grain is to be mowed.

The use of wheels, placed perpendicularly, or at right angles to the axle-tree, would be a great improvement to all our carriages.

CHAP. VI.

ENCLOSING.

A GREAT deal of land has been enclosed, and is still enclosing, in this county, generally by Act of Parliament, but sometimes by private agreement. Very large wastes and commons still remain. Among these, Clun forest deserves to be particularly noted. It contains above 12,000 acres. The uncultivated state of many farms surrounding this magnificent waste, has been urged as an argument against its enclosure. It is supposed the farmers have more land than they can cultivate, and that adding to their enclosed grounds, would increase the evil. However specious this reasoning may appear, it is not true. The existence of the unenclosed land, is the cause of the surrounding farms being uncultivated, and therefore their bad state is an additional motive for the enclosure. Whilst the common continues, the adjoining farmers will, in general, consider their enclosed lands, principally, as affording winter-meat for their sheep, and that without care or culture; and their time will continue to be taken up in looking after their flocks. They now pay their rents from the sale of wool; but if the common was holden in severalty, the profit of the wool may be continued or increased, with every other advantage of good husbandry both to landlord and tenant. Whilst the common remains open, the landlords must be content with a very inadequate rent for their enclosed land, and without any consideration for their right of common.

Without

Without looking minutely where the principal benefit of enclosures rests, there is certainly a sufficient balance of advantage upon the whole, to warrant the strenuous endeavours of every friend to mankind in forwarding them. It must be owned, a great deal of beauty is often spoiled by enclosures; and it seems a pity to lose scenes of pure Nature, in a country so artificial as that of South Britain. This applies chiefly to very large wastes, for instance, Clun forest, which has been just mentioned, is a fine specimen of smooth and extended turf, with every variation of swelling banks and retired dingles; but when it is considered how little profit is produced to those who have a legal right in these wastes, or to the public at large; what a scope is given to industry by their enclosure; and that the population of this country seems to require an extended cultivation, the latter motives must preponderate. The expense of enclosing, indeed, is often such, as to postpone the individual return for some time; but the public are immediate gainers; and where that is denied to the private persons concerned, their distant interest will still prove an ample reward to their families.

I enclosed a small common a few years ago, without the expense of posts and rails. When the line of fence was marked out, a trench was dug of considerable width and depth. Strong bushes of hazle, willow, hawthorn, or whatever could be met with in a neighbouring wood, were planted in this trench. The loose soil was then placed to the roots, then a bank of turf was raised on both sides, rather higher than the soil adjoining the stems. By these means, the roots of the quick are placed in cool and moist soil; the turfs on each side form rather a hollow line, whereby the rain is directed to the plants; whereas, if a bank is made first, and the hedge planted afterwards, the

roots have not the same quantity of loose soil to strike in, and what soil they have is dry; so that many of the plants die, or do not thrive. When the fence was so far advanced, young hawthorns, or hollies, or their berries, were put between the stems of the old quick, the tops of which were then cut off, leaving them about stake-high, and these tops made bearding, *i. e.* were stuck on the top of the turf-bank, on each side, thickening the present fence, and protecting the future. Of between two and three miles of fencing made in this manner, on very high ground, scarcely any plants failed, though the age of them, the rude manner in which they were transplanted, by being stocked out of old woodland, the distance of carriage, and the frequent interruptions by frost and snow, to their being replanted, were very adverse circumstances. As the value of most coppice-wood is daily declining, I look upon this as a valuable appropriation of it, wherever it can be done; one lot of ground is cleared, and another is enclosed. Young hawthorns are generally planted from six to eight inches distant, in a single row, which I have found much too thin. I would advise a double row at that distance, or a single row as thick again, by which means one half may be plashed at a proper age, and the other half cut off stake-high, saving the expense of cloven stakes, and giving permanent ones. Willow-stakes I would in general prefer to oak, because they will almost always grow, especially if the sort is suited to the soil; for some willows or salallows grow luxuriantly in dry soils. A little observation will point out the sorts better than any description, where the species are so numerous. MILLER mentions 16 sorts, and says the basket-makers distinguish at least 30. Holly seems the best plant for hedges, in every respect excepting quickness of growth. It is more beautiful than any other; it is a better barrier,
a better

a better shelter, and will endure in the worst situations. Deciduous thorns are more formidable to cattle than smooth-quicks, but sheep will browse them equally with the smoothest plant; they will force their way through them. A great deal of wool is lost by thorn hedges, and the damage done to the hedge by its adherence, is nearly equal to what the fleece receives. Mr. WILDING recommends alder for fences in moist situations, as it is not liable to be browsed by cattle or sheep; and crabs, and the black-thorn or sloe, for exposed situations. Stone walls are, perhaps, the best boundary fence in all new enclosures, where there is a substratum of proper material, or where it is near; and considering the want of absolute dependence upon all fences that are planted, and the almost constant expense of repairing, clipping, or plashing them, the cultivators of walled farms may view themselves with a much greater degree of self-complacency than has usually been allowed them. Though every proprietor should preserve or raise timber in proportion to the size of his domains, yet I am no friend to trees in hedge-rows. They hurt the fence; the fall of the leaf injures the late grass, and somewhat taints the sweetness of butter made at that time of the year*; they are of little value as timber, from the difficulty of preserving them from the axe or pruning-hook; and they prevent a lofty hedge, which is a better shelter, and which is some protection from trespass by hunting; an evil of little consequence where the country is slightly cultivated, but a very serious one in districts of improved farming. If

* "Ash and beech I look upon as most pernicious."—Mr. WILDING.

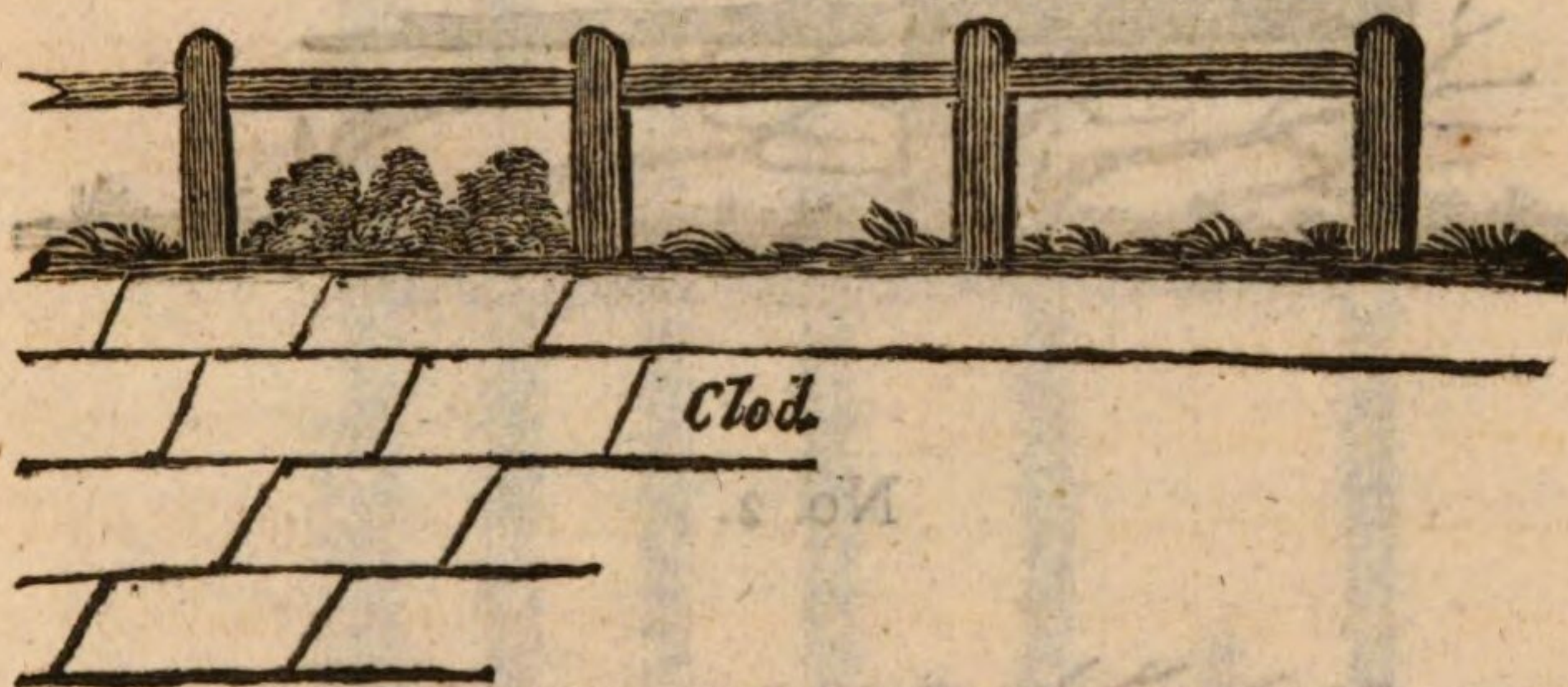
It should be recollected that all kinds of fir, if browsed by the cattle, spoil the milk.

many farmers are cautious of turning out horses to grass, from the injury their feet do, the galloping over young clover, or tender turf, is surely very objectionable. That farmers who are fond of the sport, or who look upon it as a means of selling a horse at a high price, should not complain, or should miscalculate, does not alter the fact. And the number of fields that are laid open to each other, and the hedges that are to be repaired after every day's diversion, where the sportsmen are numerous, or inconsiderate, is subjecting one set of men to real inconvenience for the diversion of another set of men.

Part of the Longmynd has been lately enclosed in somewhat the same manner as that I have instanced, but with better materials. The Rev. Mr. WILDING (the principal landholder, among very many proprietors, who has planted more largely than most persons of equal fortune, and who may be regarded as the real friend of his neighbourhood, with reference to objects more important), made early preparation for enclosing, by ploughing a field and sowing it broad-cast with haws, or hawthorn-berries, intermixed with acorns. He has now stocked out the hawthorns, and such of the oaks as were too near, and gets a fence capable of defending itself, and leaves a wood of oaks, set out at proper distances for timber, and which are also equal to their own preservation.

The late Mr. LLOYD, of Aston, favoured me with the following observations upon this subject: "Having tried various modes of making fences, I am decidedly of opinion that the following is the most advisable I ever knew. Enclose the field with a single post and rail five feet high: put another post and rail exactly similar at five feet distance, and parallel: ditch up to them on each side, so as to form
a bank

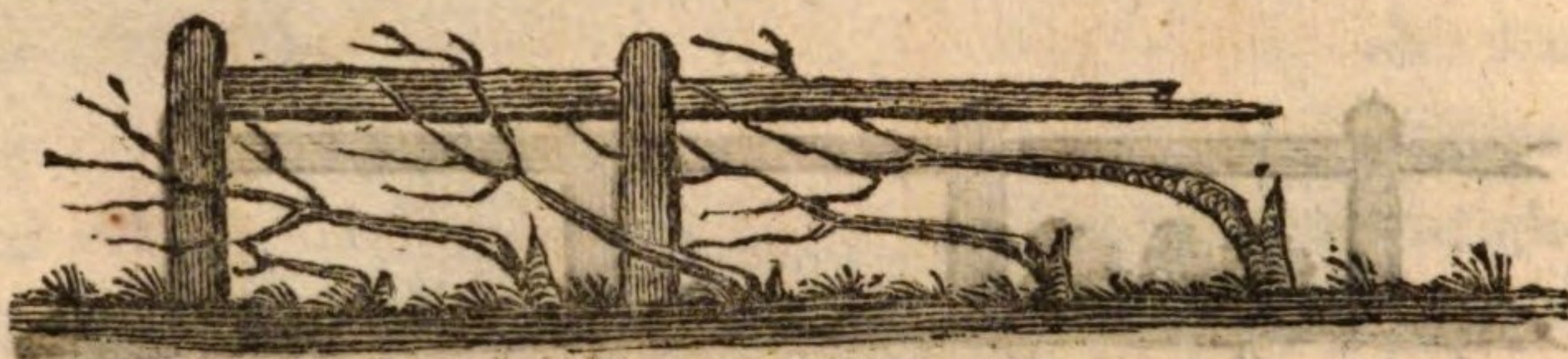
a bank between the posts and rails, which should have frequent diggings, and be manured to receive the quicksets in October, after which some litter may be thrown to the roots, to prevent the frost from injuring them. The more frequently the quicksets are cleaned, the better they will pay the expense, and if they are well taken care of, they will afford you the posts and rails for another young fence, in about three years. Some good soil being put to the quicksets, and forked in, would expedite their growth. The rails should pass each other, and go entirely through the posts, and be pinned on each side as well as through the post. Two rows of quicksets are far better than one. A fence may be raised in this manner in five years without any further assistance from posts and rails.



“Plashing hedges is usually very ill done in Shropshire; it is a business which requires great nicety and judgment, and has the most ignorant operator to perform it in general; who, in the first place, cuts downwards through mere idleness, instead of upwards, and so exposes the heart of the plant to the weather. In the few places where hedges are well plashed, it is done with as much care as a fruit-tree is trained to a wall, and, in its way, perhaps with as much judgment.

“The quicksets should not be cut as in No. 1, but as in No. 2.

No. 1.



No. 2.

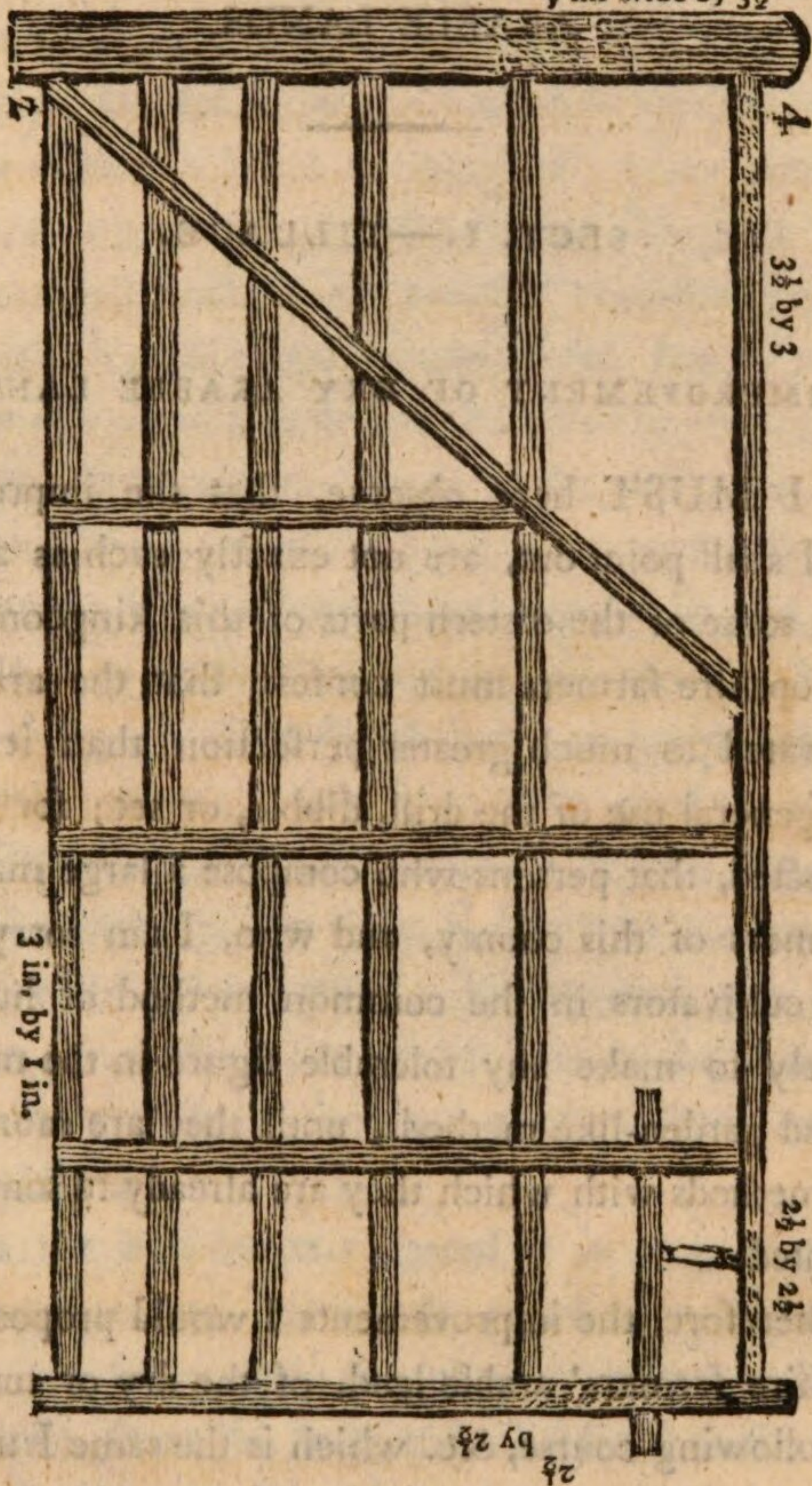


“See the plan of a gate given me by Mr. BISHTON, of Kilsal, and which I have found to be so useful, and so little liable to be out of repair, in comparison with any other, that I have adopted it very generally upon my estate. Farmers should contract with their wheel-wright to

to keep their gates in repair by the year, and to go over them regularly (exclusive of accidental repair) every quarter."

5 feet long.

5 in. wide by $3\frac{1}{2}$



Scale half an inch to a foot.

CHAP. VII.

ARABLE LANDS.

SECT. I.—TILLAGE.

IMPROVEMENT OF DRY ARABLE LAND.

“ I MUST here observe, that the improvements which I shall point out, are not exactly such as are practised in some of the eastern parts of this kingdom, where the Shropshire farmers must confess, that the arable land is cultivated to much greater perfection than it is here, by the general use of the drill, dibble, or set; for it cannot be expected, that persons who compose a large majority of the farmers of this county, and who, I am sorry to say, are bad cultivators in the common method of husbandry, are likely to make any tolerable figure in the most complete and garden-like methods, until they are more perfect in the methods with which they are already in some degree acquainted.

“ Therefore, the improvements I would propose for the Shropshire farmers’ arable land, of the dry or turnip sort, is the following course, &c. which is the same I used upon 400 acres, being part of a farm which was in my own occupation for many years, and until about five years ago, when I resigned it to a relation, who still pursues much the same method; dividing the arable into four parts, that is, for wheat, turnips, barley, and clover.

“ The

* The wheat stubble is harrowed by drawing the harrows one way, which lays the stubble, and returning back along the same stroke, draws up the greatest part of the stubble, which is gathered by the harrows; and a person following them with a fork, unloads them, and lays it upon heaps. I shall hereafter mention the disposal of this straw.

“ From the middle of November to the end of December this stubble ground is ploughed; at the latter end of February or beginning of March cross-ploughed, and when dry, harrowed, and if the weather proved suitable, much of the couch grass is got out and burnt; but if not so, by this method, it is checked in its growth during the seed time, and the business is more easily performed, which is to be done in the months of May, June, and July, in which months the fallows have three ploughings and sufficient harrowings to prepare for turnips, for which I laid about eight cubic yards of reduced dung, or 72 bushels of clod-lime upon each acre; which was ploughed in at the last ploughing, though sooner would be better, if the dung is reduced enough by that time, or the land so clean as not to require much harrowing. Turnip-seed, one pound to the acre, sowed from the 7th of June to the 14th of July, the plants twice hoed; average produce from two pounds fifteen shillings.

“ As the land became cleared of its crop of turnips, it was ploughed and harrowed, preparative for a crop of barley; and being again ploughed up in butts or lands, five yards wide, from the latter end of March to the latter end of April, was sowed with $3\frac{1}{2}$ statute bushels of barley, 14lb. of common red clover-seed, and one peck of fine rye-grass seed to each acre; the average produce about 40 statute bushels of barley.

“ The young clover not eaten between December and
May,

May, the part mowed, on an average produced about two waggon-loads, or a ton and an half to the acre. In the next month of October, ploughed in nine-inch furrows and six inches deep, and sowed with $2\frac{1}{2}$ bushels of wheat; produce about seventeen bushels.

“ The turnip-crop I dispose of generally in the following manner: first, by drawing home at the beginning of November, those under the hedges, and some of the largest over the rest of the field; taking all up where the horses and carts are to pass. When the tops and roots are cut off, carry them home, and place them in heaps of about 12 cart loads each, in form of the cone of a wheat-rick; cover a foot thick with straw and thatch. These serve as a resource in time of frost and snow, for the beasts that are stall-fed, of which I generally had 20 yearly, and a man and boy, with one horse and cart, supplies them; leaving as many turnips to be eaten upon the land with sheep, as to ensure fertility enough for the crops of barley, &c. for the barley being too rank, generally spoils the young clover growing with it. Another advantage obtained by stall-feeding with turnips, is making a large quantity of straw into manure at home; which is the best use that can be made of it, as straw food is not an improver.

“ The stubble straw, as I mentioned before, is made into manure, by being carried and ricked up for litter by the side of a sheep-fold in the centre of these 400 acres, in which the sheep feeding upon turnips in the winter are lodged every night, from the middle of November to the beginning of March, where a servant goes every morning before five o'clock, with a small quantity of hay or clover, which is laid in a narrow cratch fixed to the pales all around the fold; by this method, when any are disordered they are sure to be found and slaughtered, and the loss is but trifling.

But

But since I used this method, that loss has been but seldom the case, as the comfort the sheep receive by their being lodged in a warm fold upon the stubble, and each taking a bit of dry meat in the morning, are reasons, I believe to operate against the bad effects of the cold food taken into the empty stomach; and which is supposed to destroy many every year, to such a degree as to occasion some people to decline pasturing sheep upon turnips. My turnip sheep are generally bought in the Autumn from Leicestershire.

“ I would beg leave to recommend the preceding method of cultivating dry lands, to those who have been in the custom of long tillages, and without the use of general turniping, to be continued for so long as two courses of tillage, that is, eight years, by which time their land will be clean, and more fit for what I conceive to be a more beneficial mode of husbandry, and which mode I now pursue, namely, first, turnips managed and manured as before; second, barley; third, pease in rows, one foot asunder, hand-hoed and weeded; fourth, barley, with 10 lb. of common clover, 4 lb. of white Dutch clover-seed, 2 lb. of trefoil-seed, and 1 peck of fine rye-grass, 8 cubic yards of rotten dung, or 72 bushels of lime laid upon the young clover in November; fifth year mow or graze; the sixth graze till October; and the seventh plough and sow with wheat as before; the land mucked for turnips, and lime, or compost of lime and earth or mud, &c. on the young clover in the Autumn. This I believe to be a more profitable course than that which I have heretofore practised, affording a greater change (and thereby obviating the failure both of turnips and clover) and occasioning more grass-land, which for many years has exceeded the tillage in point of profit.

“ IMPROVE-

“IMPROVEMENT OF WHEAT LANDS, OR MIXT SOIL
UPON CLAY.

“The turf being well ploughed and laid dry before Christmas, in the following month of April sow with $4\frac{1}{2}$ statute bushels of oats; plough and lay dry in the Autumn, and in the months of May, June, and July, give it three good ploughings and harrowings, rollings, &c. so as to reduce it; being drawn up and laid dry, and continuing in that state to the middle of September, though made both fine and clean, gets an adhesive and binding quality, and consequently works lumpy, and therefore has the texture and quality which the farmer, by mistake (as I said before) is afraid of losing, by making his land clean. It is in the months of May, June, and July, when the sun is powerful, that land is to be cleaned; a ploughing in August is seldom of much worth.

“If manured with lime, lay 80 bushels upon an acre; if with dung, 10 cubical yards to each acre, either ploughed under at the July ploughing. From the 20th of September to the 10th of October, sow wheat 9 statute pecks to the acre, after having soaked the same not more than eight hours in mild brine, and dried with lime to prevent the smut. The next Autumn plough the corn stubble, and at the end of March plant beans or pease in rows one foot asunder, hand-hoe and weed them. Plough in the Autumn, and sow oats in the Spring, and lay down with 10lb. of red, 4lb. of white Dutch clover-seed, and one peck of rye-grass seed to each acre. Manure the seeds in the Autumn, let it lie in sward two or three years, as it may be required. At next breaking up plant with beans, hand-hoe and weed; next Autumn sow with wheat, then with beans in rows, hand-hoe and weed that crop; oats and lay down with seeds

seeds as before. In lieu of one of the hoeing crops, if the land is not too wet, potatoes may be planted, which would be found very profitable to the wheat-land farmer; being very useful food for feeding or milking cows in the Winter, as they produce much sweet milk. I would fallow for the first crop in one tillage, and hoe the next, and so proceed alternately; the Summer sun to wheat-lands is certainly useful, the manuring with dung or lime also alternately. Where marl is to be procured at convenient distances, nothing turns to more profit; upon open soils, with either clay or dry bottom, marl laid upon the sward in the Autumn, and to lie one year, is generally best; particularly if the marl is not perfectly good. Lime is sure to pay well the next tillage*.”

“ Good farmers on light soils will entertain this prescription with caution, and their apprehensions of a crop of couch will outweigh their hopes of a crop of clover. Pease are precarious; one week’s hot weather whilst in blow, is fatal to the crop. See the following

TABLE OF 400 ACRES CULTIVATED BY THIS RULE.

1794	1795	1796	1797	1798	1799	1800	1801
100 acres							
Barley	Pease	Barley	Clover	Clover	Wheat	Turnips	Barley
Clover	Wheat	Turnips	Barley	Pease	Barley	Clover	Clover
Wheat	Turnips	Barley	Pease	Barley	Clover	Clover	Wheat
Turnips	Barley	Pease	Barley	Clover	Clover	Wheat	Turnips

“ Hence the farmer will have no turnips in the years 1797, 1798, 1799†.”

“ 1. Turnips; 2. barley; 3. pease; 4. barley; 5. clover and rye-grass; 6. clover and rye-grass; 7. wheat. Wheat only once in seven years cannot be a profitable system on good dry land: and to be sown on ley the second year, more particularly after rye-grass, is very bad, being gene-

* Original Report.

† Mr. APPLEBY.

rally subject to be eaten by the worm. 1. Fallow; 2. wheat; 3. beans; 4. oats; 5. seeds; 6. seeds; 7. seeds; 8. beans; 9. wheat; 10. beans; 11. oats; 12. seeds; 13. seeds; 14. seeds. Under this system here is wheat on lands called wheat-lands only twice in 14 years, which surely cannot be the most advantageous. If it deserves the appellation of wheat-land, that crop may be taken four times in twelve years, and the land kept in good order thus:—1. fallow; 2. wheat; 3. beans, drilled and hoed; 4. oats; 5. clover; 6. wheat, repeated by fallow, &c.*”

This observation I think supposes a different soil to that Mr. BISHTON had in view in the remarks here commented upon.

“The grains cultivated are, wheat, barley, oats, pease, beans, and vetches †.”

Mr. HARRIES has favoured me with the following observations, which may with propriety be read in this section, though they have a reference also to that which follows. It is difficult indeed to keep the general and particular branches of a subject distinct.

“I am ready to allow, that the greater part of our fallows are not sufficiently worked and cleaned; but there are many active farmers who begin their fallows in January, and by repeated ploughings, harrowings, and rollings, bring them in very good order for wheat. Others graze the second year’s clover till about Midsummer, and sometimes mow it at that time: if the soil is dry, and the Summer favourable, they bring it into very good order by seed-time. It would be better husbandry to raise a crop of turnips on such lands, after wheat or barley. If this was done, at least in every other course, a good crop of wheat would be grown upon clover leys, upon one ploughing, at

* Anonymous.

† Mr. TENCH.

a light expense. We frequently break up our clover leys of the first or second year, if they are tolerably clean, upon one ploughing, and put an instrument upon the plough which we call a fay or flay, that cuts the turf and lays it in the bottom of the furrow. Last year I had a clover ley worked with this instrument upon the plough, and after the seed was harrowed in, scarce any of the turf came upon the surface, and the field looked as well, and appeared as clean as though it had been sown upon a fallow. We have taken to plough a wheat, barley, or pease *brush*, from which the crop is early got in, and to sow on it about a bushel of rye and a pound of turnip-seed per acre; with these seeds the charlock and other seeds will vegetate, without perfecting their seeds: it is eat down in March and April, when it is of great use for sheep and yearlings, and two years old calves. If a principal crop of turnips follows, it may be eat till the middle of May*.”

“The farmers of this county should be encouraged to cultivate their land in a more complete and garden-like method, by the introduction of the drill, dibble, or sett, and not aim at perfection in their old slovenly way†.”

“The usual seed-time for wheat, is October, and for lent grain, from the beginning of March till the latter end of April; and corn-harvest, from the beginning of August till the middle of September. The grain, in general, is sown broad-cast, though some of the neatest farmers make use of the drill-plough to great advantage, and turnips are found to answer admirably well‡.”

The drill-husbandry may answer best in light and gravelly soils, such as require an extra quantity of seed; where the

* EDWARD HARRIES, Esq.

† Rev. Mr. ROWLEY.

‡ Mr. TENCH.

plant gathers, as the farmers express it, that is, where many plants or stalks put out from one root, dibbling appears preferable. This is a very partial improvement, but it is worthy of being extended, when it is considered how much seed may be saved, and how many children may be taught to earn wages thereby. Where it is first introduced, it will be comparatively expensive, but Mr. PROBERT, to whom the agriculture of this county owes many obligations, has it now done at 9s. 6d. per acre; having at first given a higher price, when the labour was little understood, but his present allowance is very beneficial to those who have been instructed, and at the same time very advantageous to their employer. One man, with a setting-stick in each hand, will go over about half an acre in a day: he is followed by two women or children, who drop two or three grains into each hole. The land is rolled and harrowed after it is ploughed. The holes are made without any line, but in rows, as nearly as the eye can direct, at the distance of four inches, and the holes in each row are about three inches from each other. Rows at the distance of six inches, and holes at the distance of four inches, have been tried, but the distances first mentioned are found to be preferable. The holes are two inches deep. A bushel of wheat will set an acre. Stiff land, if in good condition, answers best. The 14th Report of the Society for bettering the Condition of the Poor, contains a very interesting communication from the Rev. Dr. GLASSE, upon this subject. It will be found at page 85 of the 3d vol. The experiments he mentions were, I presume, in the parish of Greenford, in Middlesex. The return per acre was sometimes 40 bushels, or more, Winchester measure; being a fourth more than the average produce of the neighbourhood. Five women set an acre in a day, following the line of the furrow: the rows were
six

six inches distant, and the holes in the rows, two inches only. In 1801, one farmer in Dr. GLASSE's parish had 30 acres of dibbled wheat, and another 40 acres.

SECT. II.—FALLOWING.

“THE tillage part of what is called the wheat-land, or mixt soil upon clay, is generally very ill cultivated by a fallow, prepared only by the first ploughing being performed in May or June; the next in August; and in September it is ploughed and harrowed, therefore sowed in the latter end of October: by this mode the land is not reduced, and consequently the seeds and weeds not killed. But it is fair to observe, that the mistaken people who cultivate thus, produce a reason for their conduct, by saying, that if they made their land too fine, it would produce less wheat*, by the autumnal rains beating the fine land into a crust, and thereby stopping vegetation. And to this mistake and false reasoning, for want of better observation, are owing the great losses and injuries to tillage-farmers; for this is a strange preparation for the succeeding crops of barley, oats, pease broad-cast, and oats, which generally follow in succession: and then it lays in poor sward three or four years, by being laid down with clover, rye-grass, and weeds, which does not produce a sufficient pasturage to pay its rent. But if the fallowing were completed in the early part of the summer, as I shall explain under the head

* “Although it requires less labour, I conceive that it does not require less judgment to make light land heavy, than to make heavy land light. The best Shropshire farmers, and perhaps the best practical farmers in the kingdom, are convinced by experience, that on *light land*, it is bad husbandry to destroy the tenacity of the soil, by too frequent ploughings for a wheat crop.”—*Mr. Price.*

of improvements, the land would be cleared and meliorated; and yet when ploughed in the autumn for sowing wheat, it would not turn up too fine*.”

“ A tolerable fallow may be made, though the land be ploughed in May or June, by extraordinary labour and diligence; but a good one cannot, unless the land be first ploughed before Christmas, which is sometimes practised, but oftener descried †.”

“ Though summer fallows are by no means so frequent as formerly, yet they are used on our strong lands, preparatory for wheat, if after a stubble it is generally ploughed over before Christmas, and has at least three more ploughings in the course of a summer; if, upon a clover ley that is foul, it is grazed in the spring with sheep, and the first ploughing not given before the month of June, and there is afterwards sufficient time to work and clean it. Sometimes the clover is mowed, and a tolerable good fallow is made previous to October. Though summer-fallows are not so frequent, turnip fallows have increased in a much greater proportion upon our dry soils that are not too strong ‡.”

“ Fallowing is seldom practised here, except on the strong soils ||.”

I am happy in introducing in this place, two letters from Mr. COTES, of Woodcote, in this county, to Lord CARINGTON, and very properly published in the Salopian Journal of April 8, 1801, describing a use of fallows, at once profitable and benevolent.

* Original Report.

† EDW. HARRIES, Esq.

‡ Mr. ROWLEY,

|| Mr. TENCH.

THOUGHTS ON THE MEANS OF AFFORDING AN EFFICIENT SUPPLY TO THE COUNTRY: ADDRESSED TO LORD CARRINGTON, PRESIDENT OF THE BOARD OF AGRICULTURE, IN TWO LETTERS, BY JOHN COTES, ESQ.

“Woodcote, December 30, 1800.

“MY LORD,

“Invited by your Lordship’s public appeal, I submit what I conceive may be an effectual means of contributing to the ample supply of the country. I am induced to do so from the decided conviction, that an adoption of the most easy and plain cultivation imaginable, by only rendering that *useful* which is now *useless*, would introduce a greater plenty than the people of England could consume, and this by a practice which would neither require expense, the addition of an acre not already in tillage, or scarcely an additional trouble. I am aware how chimerical such bold assertions must appear; but the result of much practice enables me to state, and that without the fear of opposition from the practical man who will candidly investigate the mode, that the *wheat fallow*, under the culture I subjoin, would produce abundantly more of that nutritious plant the potatoe, than the people of this country could want, to make up any possible deficiency in the wheat crops; and the fallow would be in no degree injured for its succeeding crops. The potatoe is well known to be the best substitute for wheat; and I speak with much confidence when I say, that, under all circumstances, it will be found the only efficient one. It is also known, the potatoe, occasionally in cultivation, precedes the wheat crop; but this is so rarely practised, and then upon a system which so oppresses the

land,

land, as to keep this practice on a scale too limited to procure any general supply. I presume to offer a system, which would render from each acre a considerable quantity, and yet the plant, being set over only a *portion* of the land, would not oppress it.

“ The practice I submit is as follows :

“ Plough a wheat-fallow in two, three, or even four *bout-ridges*, dependent on the foul condition of the land. In the *furrow* put some dung, on that dung place the potatoe-sets, and then plough a *bout* upon them : a *ridge* thus formed, gives a double portion of earth for the plant to grow in, and it has the benefit of the dung to root in. This applies to that part of the land which bears the *crop*, and which will form so many rows. The remaining part of the land will form so many alleys, in which, during the summer, the common operation of the plough will make the *fallow* ; and thus crop and fallow be had, without injury to the land. The fallow will, even in most cases, be amended, from the circumstance of some little additional trouble, which, for the sake of the potatoe crop, will be bestowed by the farmer, beyond the tillage he usually gives to the summer-fallow. The potatoe crop thus obtained, is had from land otherwise wholly unproductive ; and its value, perhaps, not inferior to any which may succeed it. Hence two crops, the immediate food of man, may be had within the same tillage. Nor is it a little important at this moment, that the potatoe crop would be had twelve months in advance ; for, supposing the summer-fallow of the approaching season to be thus applied, its potatoe crop would be returned next autumn ; whereas the same land can only afford its wheat crop twelve months after. But the great difficulty, and which I know to be great indeed, and scarcely to be surmounted, is the prejudice with which any thing

thing like innovation is received. Whether, by a recommendation from landlord to tenant; whether, by a bounty on the culture; or whether, by any other means, this difficulty is to be removed, it is not for me to say. It is solely for me to state the result of that practice which has given me so decided a conviction, and which, as it tends to the relief of my fellow-creatures, I feel it a duty to submit. I should apologize for taking up so much of your Lordship's time: I will not, however, trespass further than to add, that if even a small portion of the summer-fallow was applied under this culture, and the system extended to the different parts of the Island, a greater supply of food would be obtained than any want could call for; and that in lieu of precarious and expensive importation, we should be able to obtain from our own soil that produce which would render us independent of all foreign assistance.

" I have the Honour to be,

" Your Lordship's most obliged, and obedient servant,

" JOHN COTES."

" *Woodcote, January 28, 1801.*

" MY LORD,

" I was so much aware of the objection which might be stated to the potatoe, as " an exhausting crop," that I endeavoured very cautiously to obviate this difficulty, in the letter I had the honour to write to your Lordship; and if your Lordship and the Board will have the goodness to refer to it, it will be seen that the system I propose, attaches the crop to so small a *portion* of the land, and that in rows supported by dung, in which the plant is actually set, as to remove any thing, in my opinion, like objection on that head; the alley, which constitutes the fallow, bears no crop,

and therefore cannot in possibility be exhausted. Indeed, I see the reverse in so strong a point of view, that I must desire to repeat what I stated in my last, that the land will even be in a higher state of cultivation to receive its succeeding crop, from the additional pains which the farmer will afford, in order to the more effectually obtaining of his potatoe crop. Nor did the probability of the second objection pointed out, escape me, namely, "that of loosening the soil too much for wheat." Supposing this difficulty to occur, it might be obviated by sowing under furrow; but no such difficulty could exist, for the land I propose to apply, is of a texture which would not be reduced to too fine a mould. In this I am very anxious to be particularly understood, as not applying my practice to that land, which would otherwise be a turnip fallow; for, although this, which is a light soil, might full as well grow the potatoe, yet this would not come up to my idea of rendering *useful* that fallow which has hitherto been *useless*. It would only substitute one crop for another; and experience tells me, that the present unproductive wheat-fallow would be brought to the use I propose, and supply more of that wholesome and nutritious food, the potatoe, than the country could want to make up any future deficiency in its wheat crop, if only a small proportion of the fallow could be thus applied, provided the system could spread itself to the different parts of the kingdom, and that its adoption could be fitly practised: for it matters not how good any system may be, if not acted up to; and here I know the great difficulty which must arise, for prejudices are not easily upset. Could this be effected, I would pledge myself that this most easy practice would render a supply beyond possible want; for it does not rest as an experiment to make; I have practically made it again and again. There
is

is another objection which may be, and I conclude will be, suggested, and which I feel more forcibly than the others, yet by no means an obstacle. It may be stated, that there will not be time enough to get up the crop, so as to sow the wheat in its proper season: this, however, need not be the case; for the getting up of the potatoe will be very expeditious, when done by means of the plough, which, by throwing a furrow from each side the row, will leave the plant so exposed as to be very easily and quickly got. There are many counties where, in the course of cropping, the wheat does not immediately succeed the fallow. In this case the objection could in no degree hold; nor need it in any force, where the wheat does immediately follow.

“I feel that I intrude much on your Lordship’s time and attention, but as the subject presses itself on my mind as one which, in so peculiar a degree, interests the lower orders of the community, I am satisfied I shall receive your Lordship’s indulgence. The comparative view I have taken of the poorer orders of the people, where the potatoe is, and where it is not grown, has made much impression on me; and practice assures me, that an adoption of the system I have taken the liberty to suggest, would so amply return an abundant supply of this nutritious and wholesome food, as to equalize that comfort. It is my practice to allot a portion of land to my labourers, and to some of my poorer neighbours. The scarcity is now so great, that I shall likewise expect my tenants to give from ten to fifteen rods (a rod eight yards square) of fallow land to each of their labourers; and, in so doing, I consider they are giving that which is no loss or detriment to them. They are only giving that which would otherwise be unproductive; as the land is going on in its state of cultivation for the succeeding crop; and yet, at the time that they lose nothing,

the poor man will derive his every comfort ; he will derive that produce which will be the great staff to himself and family, and an overplus sufficient to feed his pig : hence he will obtain, in a great degree, his yearly supply : he has then his weekly earnings for the portion of corn he may want, and oftentimes be able to procure some meat. Thus, I am sure, the poor man, who has his supply of potatoe within himself, is in greater comfort than he who, with double wages, has no such resource.

“ Your Lordship and the Board will easily infer how applicable the fallow intended for wheat may be made to other growth. Upon the precise same practice, I have cultivated, with much success, the transplanted Swedish turnip. This would be a happy resource in dairy counties, which are mostly strong soils, and where the common turnip is not grown. The Swedish turnip has many properties, and peculiarly fitted to the wheat-land farm. But, my Lord, this is a digression which goes into the more general subject of agriculture, and therefore I will not pursue it. If any hints of mine can be rendered useful on the subject on which I have the honour to address your Lordship, I shall be most happy ; if not, I shall have derived the comfort of imparting that mite of information which I have conceived useful to my fellow-creatures.

“ I have the Honour to be, your Lordship’s very faithful and obliged servant,

“ JOHN COTES.

“ *Lord Carrington,*

“ *President of the Board of Agriculture.*”

The

The following is added, as a plan to illustrate the fallow and the potatoe crop:

Fallow ridge.
Potatoe ridge.
Fallow ridge.
Potatoe ridge.

SECT. III.—ROTATION OF CROPS.

For the following course of crops I am indebted to Mr. HARRIES.

Clover	Clover	Clover	Clover	Clover	Clover	Pasture
Wheat	Pease	Wheat	Wheat	Vetches	Fallow	Oats
Barley	Wheat	Turnips	Barley	Wheat	Wheat	Fallow
Clover	Barley	Barley	Turnips	Oats	Oats	Wheat
	Clover	Clover	Barley	Clover	Clover	Oats
			Clover			Clover

“ The rotation of crops is wheat, barley, turnips, barley and clover; or pease, wheat, turnips, barley, or oats and clover. Sometimes a crop of beans or vetches is taken before wheat, according to the fancy of the farmer*.”

“ The land I have in tillage is about 80 acres. I plough and sow my clover leys in October, or very early in November, with wheat, covering it with a very thin or light top-dressing of lime and soil prepared for that purpose: as soon as my wheat is reaped, I plough the stubble in, and sow it with turnip; these I eat with sheep in December; very early in February I sow the early Charleton pea,

* Mr. TENCH.

two Winchester bushels to an acre, with a machine that sows two rows only, at the distance only of 18 or 20 inches; these I hoe with a horse, when, and as often as they require it. I have bagged them as early as July 8th, and never later than the 20th, when I immediately dung my land and sow turnips. I carry off the large ones in December, and the small I eat with cows, sheep, pigs, &c. and in the Spring I sow barley and clover, which I mow or eat the next Summer. By this method, which I have used for four years, my lands are perfectly clean, and never require to be fallowed; the produce is about 26 bushels per acre of wheat, and quite as many pease; and I have no doubt but I shall get my wheat, when my lands are a little more improved, without any manure: this next Spring I shall drill my pease at 14 inches, but not to exceed two bushels per acre *."

Mr. HARRIES forwarded the above account to the Board, and added the following observations upon it.

"It appears to me that Mr. PRITCHARD's management may be very profitably adopted in like soils and situations. His distance is little more than a mile from the town of Shrewsbury; his soil, a sound pebbly loam of some depth, with a gravel underneath; it is an early and excellent soil. White pease are a very wholesome and good food, and may be variously employed, or they will grind and mix well with wheat-flour."

Mr. PRITCHARD informs me, that he continues the course of husbandry detailed in his paper of January 1, 1795, which gives the sanction of near six years further experience to it.

To estimate the value of the improved husbandry, we

* Mr. PRITCHARD, of Meole, near Shrewsbury, January 1, 1795.

should

should look at that which was not unusual formerly, and even specimens of which may now, or could lately have been met with in this county, viz. fallow, wheat, oats for two years, the second year's crop being sown with clover, and which clover was suffered to remain two or three years, whilst fresh land, or a clover-ley of three years growth was broken up for oats or a fallow. If barley was introduced, it was after the wheat and before the oats. Some unfavourable situation, formerly under this course, have lately, by a proper application of manure, been successfully varied with turnips and barley.

SECT. IV.—OF THE CROPS COMMONLY CULTIVATED.

“OUR crops commonly cultivated are wheat, barley, oats, pease, and turnips. 1. Wheat, sown upon a clean clover ley of the first or second year (and no wheat yields better.) The red straw wheat, seed steeped in urine or salt and water, afterwards sprinkled over with lime, and well mixed together. From two to three bushels (of 38 quarts) per acre, is sown in October. If the land is in condition, and manured a little over, two bushels per acre is sufficient. October is the best month; but on sound lands wheat is sown till the middle of November. Dung is spread upon the leys and ploughed under; sometimes we cart and spread the dung after the seed is harrowed in. If turnips are to succeed wheat, we never manure for the wheat. If lime is the manure to be used, we sometimes spread it upon the clover in July; at other times harrow it in with the soil, during the Summer, in the proportion of three wagon-
gon-

gon-loads to two acres. Summer-fallows for wheat are either dunged or limed, and sowed the end of September or beginning of October, with a little over two bushels of seed per acre. Wheat frequently succeeds pease upon one, and sometimes two ploughings. When vetches or buck-wheat are sown, they are followed by wheat. Wheat is sometimes ate a little with sheep in the Spring, wed with the hand once or twice in the month of May or beginning of June, it produces from 10 to 25 bushels per acre, seldom more; 15 to 20 bushels may be looked upon as the more general produce. It will be recollected that by a bushel is meant 38 quarts, if no explanation of the measure is given.

“*Barley.*—When barley succeeds wheat upon strong soils, the stubble is generally ploughed under the end of December, or in January. The frost prepares such soils for working well with the harrows at seed-time. When barley follows wheat on sandy, gravelly, or pebbly loams, it has frequently three ploughings; if after turnips, one, and sometimes two; we sow $3\frac{1}{2}$ bushels per acre, from the 20th of March to the beginning of May; the produce is from 18 to 35 bushels; upon powerful land I have known 40 bushels of the sprat or broad barley.”

“*Oats.*—Oats are sometimes sowed upon the turf after one ploughing, which is given in the month of January, frequently after wheat, upon stiff or shallow soils with one ploughing also. I am at a loss to state the produce, from the variety of our measures for oats, not any two markets agreeing together.”

“*Pease.*—Pease are frequently sowed upon old pastures, or clover-leys, after one ploughing, in the month of March. They are uncertain in their produce; from 10 to 24 bushels per acre are raised. I believe they are more
grown

grown upon our sound soils than any other county. They are used in fattening our large stock of hogs, and for food for horses *."

" *Rye*.—There is but little rye grown now, though formerly on the sandy loams it prevailed much, where now good wheat is grown, owing, as it is thought, to the change of the nature of the soil, from the great quantity of lime that has been bestowed upon it."

" *Vetches*.—A few vetches are sown for cutting to soil horses in the stable (an excellent practice). If left for seed, the following crop is wheat."

" *Buck-wheat*.—A little buck-wheat is sown on light soils, from the 20th to the end of May; by that time such lands may be well cleaned. It covers and shades the soil, and keeps the weeds under, and leaves it mellow, and in fine order for wheat after one ploughing: on this account I consider it as an improving crop, though not ploughed in, which is a practice with some farmers."

" *Beans*.—Scarcely any are grown in the county."

" *Turnips*.—On the east side of the county, turnips come in as a regular crop in a course, and are sown from the middle of June till the first week in July; the land is made clean and fine by frequent ploughings, the first before Christmas: they manure with 15 tumbril load of dung per acre: the produce is from 10 to 20 ton per acre. An acre of turnips will keep stock equal to 2 tons of hay. Two acres of good turnips will feed three middle-sized beasts, with barley-straw. In the parts of the county inclined to sand, the land is sound enough to eat the turnips upon the field they grow in, with sheep or young cattle: they are sometimes given on an adjoining ley or stubble,

* "Both white and grey pease will not boil well, unless grown on a sharp gravel or sandy soil. The grey-pease grown on cooler soils are appropriated to feeding pigs, or mixed with oats for horses."—*Mr. Wilding*.

and often drawn home for stall-feeding : upon the gravelly loams scarce any are fed upon the lands : the increase of this crop has been very great in the last 20 years. Few good farmers that have sound land are without a field of them, and they are generally introduced in every other course *."

" The average of wheat per acre in this county, is 22 bushels of 38 quarts ; of barley, 28 bushels ; of oats, 18 bushels, each bushel containing three half-bushels, of 19 quarts each, or 57 quarts the bushel ; pease, 18 bushels, beans 18 bushels, vetches, 15 bushels, all customary measure of 38 quarts †."

The soil Mr. TENCH cultivated, when he favoured the Board with this account, was, I believe, a gravelly loam. The average he states is, I fear, higher than that of the county at large. The customary measure varies from 38 to 40 quarts in different markets, but the test of wheat is what it will weigh. The bushel is expected to weigh 75 lb. in the neighbourhood of Shrewsbury, and 80 lb. in that of Bishop's-Castle. I have understood, that it is not unusual to buy at such a price per bushel, but if the measure weighs less than 75 lb. the seller makes an abatement ; and if it weighs more, the buyer makes an advance.

" I commonly sow two bushels of wheat to the acre, which generally produce 20 bushels ; $3\frac{1}{2}$ bushels of barley, which will produce 30 bushels. Pease with us is a very uncertain grain ; some years they will produce great plenty, and other years very little : I sow $2\frac{1}{2}$ bushels to the acre, and have seldom had more than 14 or 15 bushels produce ‡."

" Oats are commonly sown in this district after wheat, and succeed well ; but perhaps some benefit would accrue,

* EDWARD HARRIES, Esq.

† Mr. TENCH.

‡ Mr. FLAVEL.

if encouragement was given to a more extensive cultivation of beans. They are certainly well adapted to a clayey soil, and are very far from impoverishing the land. The western side of the county contains much rocky land, on which it seems turnips may be introduced on a larger scale with success *."

This advice to the western district is very good, but turnips are cultivated there in a considerable degree; indeed great pains have been taken by the superintendants of the large estates, to press the cultivation, and we have seen that the proprietor of the largest gives premiums annually to encourage their growth.

Turnips are sometime stacked for winter use, by which means the young cattle have the benefit of the tops in their most luxuriant state, and the larger turnips are preserved from frost, and are easy of access in all weather. At Purslow-hall, in this district (the seat of the bull which won the prize at Shifnal last year), a shed for feeding oxen is built in a field of considerable declivity, and there is a passage to feed them, between the head of the stall and a wall that supports the earth. Under the bank, or declivity of the field, there is a vault, with a trap-door, level with the surface of the field, through which the turnips intended to be preserved through the winter, are easily unloaded, and another door from this vault opens into the passage at the head of the stalls before-mentioned. The vault being under ground, the turnips are preserved from damage by weather. The oxen are confined in their stalls by a small gate at the back part, which gates, when opened, divide a passage behind the oxen, which divisions of the back passage become added to the stalls, and the beasts can then turn round, and drink at a running water, that

* Mr. ROWLEY.

can be turned at pleasure along a trough cut by the side of the passage, and the water in this trough can also be raised at pleasure, high enough to wash all the stalls, and can be turned, so as to flood the meadows below, when it is let off again.

At Longnor-hall, turnips have been given successfully as a winter-food for deer.

SECT. V.—CROPS NOT COMMONLY CULTIVATED.

“Hops are cultivated on a small part of the Herefordshire side of this county; hemp, flax, and cabbages are only got in small quantities. Potatoes ought to be got in large quantities, by those farmers who are situated within five miles of town manure; for such may get them to fair profit, at 5d. per bushel; and one bushel per day, for a cow, with a very small quantity of hay, will produce sweet-milk and butter, to great profit in the winter months*.”

“We have no hops, and but small quantities of hemp, flax, cabbages, or potatoes, raised in this parish. The farmers about here have had bad success in turnips (which we think a very useful root), for some years back, being commonly eaten and destroyed by some small fly, or insect, as soon as they come up†.”

The culture of potatoes increases annually, and some farmers plant them in fields; in some places, the fields that have borne potatoes are sown with wheat as soon as the potatoes are gotten up. In 1796, the following experiments were made with potatoes at the Reverend Mr. WILDING's, at All-Stretton, in this county. From

* Original Report.

† Mr. FLAVEL.

a bushel

a bushel of potatoes eleven pounds of starch was procured; some of the residuum, or fibrous parts of the potatoes was used as a substitute for salep, or sago, and served up with wine and sugar, was found very good: some of the residuum, or fibrous parts, was mixed in the proportion of one-third, with flour that was one-third barley and two-thirds wheat; in one loaf, the residuum of the potatoes was added raw, in another it was previously boiled: either way it made good household bread, but the boiled was the lightest. Cakes were made of the residuum, without adding flour; they were about three inches in diameter, and one-fourth of an inch thick; they were baked upon tin, in a slow oven, and were very good; mixed with salt, and baked hard, they were made to imitate sea-biscuit, and with sugar they appeared a good common cake. From the same substance, a kind of thin muffin, or light cake, was made. I was favoured with specimens of the different sorts, which Mr. WILDING obligingly forwarded to me in London, and had the pleasure of producing them at the Board of Agriculture, and of witnessing the approbation with which they were received.

“ There is a small plot of land, called the *Hemp-yard*, appendant to almost every farm-house, and to many of the best sort of cottages. Wherever a cottager has 10 or 15 perches of land to his cottage, for this purpose, worth, as let in farms, from 18d. to 2s. 6d. a-year, it will, with his wife's industry, enable him to pay his rent. A peck of hemp-seed, Winchester measure, which costs about 2s. will, on an average, sow ten perches of land. This will produce from two to three dozen pounds of tow, when dressed and fit for spinning. Each dozen pounds of tow will make about ten ells of cloth, generally sold at about 3s. an ell. Thus a very good crop on 10 perches of land, or a very middling crop on 15 perches, will produce about 4l.

10s. about half of which, or 2l. 5s. may be reckoned for the woman's labour and profit, after the rent of the land, seed, dressing, whitening, and weaving expenses, are deducted. The process is easy. The hemp is pulled a little before harvest, and immediately spread on grass-land; where it lies for about a month or six weeks; the more rain there is, the sooner it is ready to take off the grass. When the skin, or rind, will peel easily from the woody part, it is, in a dry day, taken into the house; and when the business of the harvest is over, they take the advantage of the finest sunshine weather to dry it well, and dress, or, as it is called, tutor it; that is, break, or divide the woody part from the skin, or rind; which is easily performed by a simple machine, called a break, or tutor, which consists of three or four ribs of wood, or iron, which fall into each other. It is then fit for the tow-dresser, who brings it into a proper state for spinning. After it is spun, it is whitened, and then sent to the weaver, of which there are many who weave for the farmers, cottagers, &c. After the crop of hemp is pulled up, the land is sown with turnips, which prove a valuable resource for the family throughout the winter."

The late Mr. PRICE, who returned this note to the Board, was a native of this county, formerly of Salisbury, but afterwards of Bath. He died in the prime of life, at the village of Dorington, where he was born, after a short illness, July 29, 1801, having acquired a large fortune in his profession of a land-agent and surveyor. He was very liberal to his relations, whilst living, and has left handsome bequests to them, and the poor of his native parish.

I am not sure whether this useful and accurate memoir of Mr. PRICE's may not have appeared with equal propriety in the section upon Cottages, and whether some of Mr. HARRIES's communications in the last section, may not have

have been better placed in this. But I was unwilling to break the entirety of his account; and the connexion between the sections is often such, that it is difficult to separate them accurately, though the appointment of such chapters and divisions, is a great assistance to an editor of so multifarious a work.

RECT. I. — NATURAL MEADOWS AND PASTURES.

“GRASSland in this country is seldom improved, except one field next the house, and that with such shovellings as are got near it by scraping near the house.”

“The time of hay harvest is generally July.”

“On the borders of the Severn, and other the lands contiguous to these rivers, that occasionally overflow from floods, and under the adjoining lands by the particles of soil that the subsiding of the waters have found them, we have natural meadows, that are constantly mown with scythes and other implements, and are watered upon them. These are subject to the crop being spoiled from the waters overflowing during its growth, and a great loss to the farmer. An Act of Parliament to drain the meadows, and raise a race for embanking, opening the channel, and making back-drains, would be a means of greatly improving such valuable lands. Upon ripened meadows, the mangers from the chaff in the barn doors mixed with soil, ashes and shovellings, is very proper, and good. The farmer’s practice I think is good, and I am sure, any of his land, as very fit to be used for a great number of years, they consider it as more valuable than any other land at a distance.”

“The best of the meadows is that which is watered by the Severn, and is the most valuable for mowing, and for carrying the cows to it.”

from

have been better placed in this. But I was unwilling to break the entirety of his account; and the connexion between the sections is such that it is difficult to separate them accurately, though the appointment of such chapters and divisions, is a great assistance to an editor of so miscellaneous a work.

CHAP. VIII.

GRASS.

SECT. I.—NATURAL MEADOWS AND PASTURES.

“GRASS-land for hay is seldom manured, except one field next the house, and that with such shovellings as are got near it by scraping near the house *.”

“The time of hay-harvest is generally July †.”

“On the borders of the Severn, and other flat lands contiguous to lesser streams, that occasionally overflow their bounds, and enrich the adjoining lands by the particles of soil that the subsiding of the waters leave behind them, we have natural meadows, that are constantly mown without any other manure being bestowed upon them. These are subject to the crop being spoiled, from the waters overflowing during its growth, and before it is got in. An Act of Parliament to enable the occupiers to raise a rate for embanking, opening the channel, and making back-drains, would be a means of greatly improving such valuable tracts §. Upon upland meadows, the manure from the chaff at the barn-doors mixed with soil, ashes and shovellings, is very properly applied. The farmer’s pastures I think are more neglected than any other part of his land, as very little manure is ever put upon them; they consider it as more wanting elsewhere. All grass-lands at a distance

* Original Report.

† Mr. TENCH.

§ An Act of Parliament was lately obtained, for compelling the owners of land near the river Rea to this management.

from towns are, in general, too much neglected. The barn-door muck and ashes, mixed with the shovellings of roads and cleanings of ditches and ponds, should be more frequently applied to such as cannot be watered. Ponds may be frequently made on the sides of roads and water courses, to catch the fine soils that are washed down by the rains in winter: this should form part of a compost*.”

“Hay fields are shut up for a crop at Candlemas, or before. The best time of manuring them is immediately after hay-harvest. Some farmers do this work in Winter, when the ground is sufficiently hardened by the severity of continued frost. For the purpose of manuring, the diligent husbandman provides a large compost mixen. With this view he cleanses his ponds, he scours his ditches, he shovels his fold, he collects his ashes, he sends to the lime-kiln, he provides fern, weeds, stubble, &c.; in a word, he amasses all materials that will increase the bulk and promote the fermentation of a general dunghill. Melioration of soil is best obtained by an unremitted attention to this business of manuring. Hereby the quantity of grass is greatly increased, and the quality of it much improved. Two tons of hay per acre are produced instead of one, and trefoil and white clover flourish and abound instead of moss and rushes†.”

IMPROVEMENT OF PASTURE AND MEADOWS.

“Suffer no weeds to seed, nor mole or ant-hills to continue; the land to be either mowed or grazed bare once in every year. Such as is mowed should be manured in the Autumn of every second year, with dung, or compost consisting of dung and earth or mud, at the rate of about 10 cubics yards to the acre. Close attention should be

* EDWARD HARRIES, Esq.

† Rev. Mr. ROWLEY.

paid to examining the streams of water, by the assistance of the spirit level, for generally the water from the summits will be found to cover much more land than is expected; and where it takes its course through several properties, it may be agreed to be used to the mutual benefit of the owners, by stipulating the times for each to use it, in due proportion to the quantity they respectively have suitable to that purpose. I know of no improvement upon grass-land (after being drained when necessary) greater than this, though but little attended to in comparison of the large tracts that may be so improved.

“ There is another improvement, which is carried on to great perfection, upon the lands subject to the floods of the rivers Severn and Vernieu, in Montgomeryshire, bordering upon this county, by embankment; but the banks should be fixed at a discretionary distance from the side of the river, so as when embanked on both sides, the course of the flood may not be too much narrowed. In many instances it should be from 40 to 50 yards; yet there has been a great inconvenience attending this improvement, for though the produce of hay, &c. has by this means been all saved, yet this land has been found to be much less fertile by the water being kept off, and in some places it has occasioned the banks to be disregarded; but there is an easy remedy for this, by fixing at proper distances, troughs with swing gates or valves, by which the water may be suffered to overflow as usual, from November to March inclusive, and be shut out in the summer months; thus the fertility would sustain no injury, and the produce be preserved.—This is an improvement of great utility, and more neglected than that of floating.

“ Consider for a moment the immense quantity of hay, as well as pasturage, that may by this practice be saved, particularly in wet seasons, and in most situations at a small expense.

expense. I may venture to say, that many thousand acres may be preserved at from 3d. to 6d. per yard in length, but 10s. per yard is trifling, compared with the improvement which may be made in many situations. There is a bar to this improvement, however, in many places, by property being intermixed, for which reason there should be Commissioners appointed by Parliament, with power to make such improvements, when called upon so to do, by the persons forming a majority of landed property in any certain district, which Commissioners should have such power as the Commissioners of the Deytheur and Street-marshal, in the Montgomeryshire enclosure act, where near 3000l. has been laid out for that purpose, and by which many thousand acres are preserved from floods*."

The following account of grasses and plants that may be found in this county, is by Dr. BABINGTON, of Ludlow: and whilst I acknowledge the trouble he has so obligingly taken, let me add also the pleasure I have in recording it.

"The following list of grasses, and of the more scarce and curious plants which are indigenous in this county, may probably be defective, as I shall mention none, except those which are, to my certain knowledge, found therein; and that knowledge must, to a considerable degree, be more minute with reference to the plants of this neighbourhood.

"I shall freely introduce information contained in the works of different authors, whenever I think it may tend to the advancement of agriculture, or the arts. I venture to do so, from a supposition that the books alluded to might probably not be consulted by the majority of those by whom this publication will be perused.

* Original Report.

“ The grasses which I have observed to be most common, are the following :

“ *Anthoxanthum odoratum*, sweet-scented vernal-grass. This is one of the earliest grasses. It will grow in almost any soil and situation. It is generally very abundant in uncultivated places, as commons, heaths, forests, as if it were an order of Providence, that where the food for cattle is least in quantity, it shall be of the sweetest kind. The joints of the stem have a peculiarly agreeable flavour. It is said to be the only English grass which is odoriferous, and is very generally allowed, alone to occasion the delightful smell of newly mown hay. This, I think, is doubtful, since the degree of that smell does not appear to be in proportion to the quantity of this grass which is present. Cattle distinguish almost all the grasses from each other by their scent. Though we cannot perceive the other grasses to have any sensible odor, while growing, possibly the making them into hay may call forth a fragrance which before could not be discovered. This grass is deservedly in high estimation among graziers, though it does not afford so large a crop as some others.

“ *Phleum pratense*, timothy-grass. This, though once highly praised, is now found to be much inferior to many other kinds of grass. CURTIS says it is very productive, but coarse, and late ; ^{as} has no excellence which the *Alopecurus pratensis* does not possess in an equal degree.

“ *Alopecurus pratensis*, meadow fox-tail. A very early, productive, and sweet grass ; well adapted to moist, rich soils, in which it will usually afford two crops of hay each summer. If not mown early, the hay is apt to be coarse.

“ Some species of *Agrostis* are common, but they flower so late, as to be of little use for cultivation. CURTIS says, that if any of them deserve culture, it is the *Agrostis capillaris*,

Laris, fine bent-grass, as it is one of the earliest, and has fine and productive foliage.

“*Holcus lanatus*, meadow soft-grass. Produces an abundant crop, but is rather late, and cattle are not very fond of it. The hay from it is spongy, and not fit for horses. A long frost has been known to destroy it entirely.

“*Holcus mollis*, creeping meadow-grass. CURTIS says, that this grass might perhaps be found useful, if cultivated in sandy soils. It bears drought well.

“Some species of *Aira*, hair-grass, grow in this neighbourhood; but as they are not in repute for cultivation, it is needless to enumerate them.

“*Melica uniflora*, wood melic-grass. In woods and under hedges not uncommon.

“*Poa pratensis*, smooth-stalked meadow-grass. One of the very best grasses for early pasturage, and will retain its verdure in a long course of dry weather, better than most others. It will grow in any situation, but is most luxuriant in a rich meadow. It has a creeping root, and is therefore not easily eradicated. Of course it is only calculated for places which are not to be broken up.

“*Poa annua*, dwarf meadow-grass. A very common grass, which will grow in almost any situation, producing sweet, but short herbage, and flowering and seeding during the greater part of the year. Frost or drought destroys its foliage.

“*Poa trivialis*, rough-stalked meadow-grass. Is fond of wet and rich ground, and does not bear either a dry, or an exposed situation. In the former, it produces a very heavy burthen of good grass; in the latter it is apt to produce little, except in wet seasons, and is liable to be greatly injured by severe cold.

“*Briza*

" *Brixia media*, cow-quakes. The beauty of this grass is very generally noticed. Sheep are fond of it.

" *Dactylis glomerata*, rough cock's-foot. Very productive, but coarse. It thrives well under trees.

" *Cynosurus cristatus*, crested dog's-tail. Not very productive, but its foliage is very sweet, and peculiarly agreeable to sheep. It will not thrive in a very wet situation. It is not proper for hay, on account of the shortness of its foliage, and the toughness of its stems.

" *Festuca pratensis*, meadow fescue-grass. A very productive, though not a very early, grass. It is one of those recommended by CURTIS for meadows. It will grow in wet, and also in dry situations, very well.

" *Festuca elatior*, tall fescue-grass. This is very like the last-mentioned grass, but is much coarser, and is therefore inferior to it.

" *Festuca fluitans*, flote fescue-grass. This is almost the only grass in the fens of Cambridgeshire and Lincolnshire, and is a most valuable grass for such situations. " The seeds are small, but very sweet and nourishing. " They are collected in several parts of Germany and " Poland, under the name of manna-seeds; and are " esteemed a delicacy in soups and gruels, upon account of " their nutritious quality and grateful flavour. When " ground to meal, they make bread, very little inferior to " that in common use from wheat. The bran, separated " in preparing the meal, is given to horses that have the " worms; but they must keep from water for some hours " afterwards. Geese are very fond of the seeds, and well " know where to look for them. Horses and swine will " run risks to get at this plant*."

" *Bromus mollis*, soft broom-grass. An early grass, and

* WITHERING'S Eng. Bot.

very common; but it is generally disliked. Other plants of this genus are common, but are not much, if at all preferable to the one already mentioned.

“*Avena elatior*, tall oat-grass. Produces a large and early crop, but cattle are not very fond of it.

“*Avena flavescens*, yellow oat. Supposed to afford good pasture for sheep.

“*Lolium perenne*, ray-grass. Its being very early, recommends it to common use, though it produces very little, if any thing, for pasture, after the beginning of the summer

“*Hordeum murinum*, wall barley. Common, though it is not much, if at all valued.

“*Hordeum pratense*, meadow barley. This grass produces a good crop in moist meadows, but is by no means equal in value to many other grasses.

“*Triticum repens*, couch-grass*. Very common every where, as the farmers know to their cost. “It is a most
“troublesome weed in arable lands, and can only be
“destroyed by fallowing in a dry summer. At Naples,
“the roots are collected in large quantities, and sold in the
“market to feed horses; they have a sweet taste, some-
“thing approaching to that of liquorice; when dried, and
“ground to meal, they have been made into bread, in years
“of scarcity. The juice of them drank liberally, is recom-
“mended by BÖERHAAVE in obstructions of the viscera,
“particularly in cases of scirrhus liver and jaundice.
“Cattle are frequently found to have scirrhus livers in
“the winter, and they soon get cured when turned out to
“grass in the spring. Dogs eat the leaves to excite vo-
“miting. Horses eat them when young, but leave them
“when fully grown†.”—“Cows, sheep, and goats eat
“them ‡.”

* Called *scutch* in this county.

† Mr. SOUTHWELL.

‡ WITHERING'S Bot.

“Some

“Some of the more scarce or curious plants of this part of the country are the following :

“*Valeriana officinalis*, great wild valerian. This grows abundantly every where. A gentleman informed me lately, that he one day, when walking in the fields, gathered a piece of this plant when in flower, and carried it in his hand on account of its beauty. In a little time he became very faint, with great difficulty of breathing. This sensation increasing rapidly, it occurred to him that the valerian might be the cause of what he felt; and, having thrown it away, in a few minutes every unpleasant symptom left him, and he felt no further inconvenience. Cows eat the leaves. Sheep are not fond of them. Cats are delighted with this plant, and like to roll themselves on it. It is said that rats also are fond of it, and that it is employed by rat-catchers, in their business, to draw the rats to them. It is well known as a powerful medicine in various diseases.

“*Valeriana locusta*, corn-salad. A common plant, on banks near the hedges in this neighbourhood. Some persons use it commonly in salad, and say that it is nearly as good as young lettuce. Cattle eat it.

“*Scirpus sylvaticus*, wood club-rush. In a field close to the road leading from Ludlow to Tenbury, about seven miles from the former place, this very elegant scirpus may be found.

“*Asperula odorata*, sweet woodroof. This beautiful and sweet-scented little plant abounds in the hedges, and on high banks by the sides of the roads, in many places near Ludlow. LINNÆUS was of opinion that the scent of it would drive away ticks and other insects. Dr. WITHERING says, that it gives a grateful flavour to wine. Cows, horses, sheep, and goats eat it.

“*Lithospermum officinale*, officinal gromwell. Grows
near

near to Ludlow castle, by the side of the road near the river Teame.

“*Lithospermum arvense*, corn gromwell. A common inhabitant of corn-fields. I have found it on the wall of Ludlow. Dr. WITHERING says, “The girls in the “North of Europe paint their faces with the root upon “days of festivity. The bark of the root tinges wax and “oil of a beautiful red, similar to that which is obtained “from the root of the foreign alkanet that is kept in the “shops. Sheep and goats eat it. Cows are not fond of “it. Horses and swine refuse it.”

“*Symphytum officinale*, comfrey. Common by the side of the river, and on the ditch-banks of some of the fields below Ludlow. The leaves are used to flavour cakes and panada. The young stems and leaves are said to be good when boiled. A decoction of the roots is used by dyers, to extract the colouring matter of gum lac.

“*Asperugo procumbens*. Trailing catch-weed. By the side of a road, near the junction of the river Corve with the river Teame.

“*Lycopsis arvensis*, small bugloss. In the same situation with the preceding.

“*Echium vulgare*, viper’s bugloss. I have only twice seen this very beautiful plant near Ludlow, though it grows plentifully in other parts of the county; as in sandy places near Shrewsbury. It is a very proper object of the attention of the gardener. It improves very much by cultivation, and is then a very handsome plant in a flower-garden. What has been said of this plant, is also true of the geranium pratense, blue meadow geranium, as far as relates to its beauty, and its deserving a place in the flower-garden. Few, if any, of the larger animals are fond of eating the echium.

“*Menyanthes trifoliata*, marsh buck-bean. In two places

places near to Bedston; also near to Caynham-court, the seat of the Rev. Mr. CALCOTT. This is one of the most beautiful of all our native flowers. WITHERING says, that an infusion of the leaves is extremely bitter. In a scarcity of hops, this plant is used in the north of Europe, to give a bitter flavour to the ale. Two ounces supply the place of a pound of hops. Some people smoke the dried leaves. The powdered roots are sometimes used in Lapland instead of bread, but they are unpalatable. Some say that sheep will eat it, and that it cures them of the rot. From the Upsal experiment it appears, that though goats eat it, sheep sometimes will, and sometimes will not. Cows, horses, and swine, refuse it. The infusion of the leaves has been used in jaundice.

“*Lysimachia nummularia*, money-wort. This beautiful little plant is abundant in moist places about Ludlow. It makes a very elegant appearance in a flower-garden.

“*Campanula rotundifolia*, round-leaved bell-flower. By no means scarce in any part of Great Britain, and therefore would not have been mentioned here, were there not reason to believe that the round leaves at the root, from which it derives its specific name, are more commonly to be found, of their proper shape, in this neighbourhood than in some other places. This plant is often called *Hair-bell*.

“*Campanula trachelium*, nettle-leaved bell-flower. Frequent in the hedges in many places near Ludlow. The beauty of this plant is well-known, from its being no uncommon inhabitant of gardens, where it is often called *Canterbury-bells*.

“*Campanula patula*, field bell-flower. This plant, though not frequently met with in most other counties, is a very common, and beautiful ornament of the hedges, and road-sides, in many places not far distant from Ludlow. It grows on Caynham Camp.

“*Rhamnus*

“*Rhamnus catharticus*, purging buckthorn. In Shropshire, common. The juice of the unripe berries is of the colour of saffron, and is used for staining maps or paper. These are sold under the name of French berries. The juice of the unripe berries mixed with alum, is the sap-green of the painters; but if they are gathered late in the Autumn, the juice is purple. The bark affords a beautiful yellow dye*.”

“*Viola lutea*, yellow violet. This very beautiful plant is scattered, rather sparingly, over the upper parts of the Titterstone Clee-hill. It is much better calculated to ornament a flower-garden than many of the plants which are commonly to be found there. Were it more generally known, it would be greatly valued as a garden plant.

“*Verbascum virgatum*, large flowered mullein. By the side of the road leading from Ludlow to Shrewsbury, about 11 miles from Ludlow.

“*Verbascum blattaria*, moth mullein. This very scarce and beautiful plant grows near to the road leading from Ludlow to Shrewsbury, about five miles from the former place.

“*Heracleum sphondylium*, cow parsnip. Very common in rich meadows. Cows are very fond of it, and seem to eat it in preference to good grass. Some say, and perhaps with reason, that it is a very good plant to be introduced into cow-pastures. “In Poland and Lithuania, the poor people prepare a liquor from the leaves and seeds; which undergoes a fermentation, and is drank instead of ale. “The stalks, when peeled, are eaten by the Kamschatkians. “The Russians take the leaf-stalks of the root-leaves, peel them, and hang them in the sun to dry a little; then they tie them in little bundles, and hang them up again till they

* WITHERING'S Bot.

“ become

“ become yellow. In this state they put them into bags, and
 “ a mealy substance like sugar forms upon the surface of
 “ them. This they shake off, and treat their guests with
 “ it as a great delicacy. They likewise distil an ardent
 “ spirit from it*.”

“ *Drosera rotundifolia*, round-leaved sundew. On the
 Longmynd, near to Church-Stretton.

“ *Berberis vulgaris*, common barberry. Grows on the
 top of the rocks on Whitliff, near Ludlow, over the
 river. The culinary uses of the fruit of this plant are well
 known. The roots boiled in lye, dye wool yellow. In
 Poland they dye leather of a most beautiful yellow with
 the bark of the root. The inner bark of the stems, with
 the assistance of alum, dyes linen of a fine yellow. Some
 say that if this plant grow in a corn-field, the ears of
 wheat, for 200 or 300 yards round it, will not fill.
 Others deny that it has any such effect. It is a circum-
 stance well deserving the attention of those who may have
 an opportunity of making observations.

“ *Colchicum autumnale*, meadow-saffron. This beautiful
 plant is to be found in some places near to Caynham Court,
 and in a few other parts of this county. It is said to
 make cattle ill if they eat it, which I believe they are not
 fond of doing. It is a very troublesome weed, and very
 difficultly eradicated.

“ *Alisma natans*, floating-water plantain. This very
 rare plant has lately been observed growing wild near to
 Tenbury.

“ *Epilobium hirsutum*, great hairy willow-herb. There
 is a considerable variety of willow-herbs to be found in this
 county, but of these I will only mention the *hirsutum*, for
 the sake of adding, that I have reason to believe that bees

are very fond of it, on account, I suppose, of the large quantity of honey which it affords. A large bed of it would probably be both pleasant and profitable to persons who keep bees.

“*Epilobium angustifolium*, rosebay willow-herb. This answers better for bees. It flourishes in a less moist situation, and is superior to the other in the size and beauty of its flowers. I have seen a bed of it nearly covered with the bees from a neighbouring hive. It grows about five or six feet high, and bears a great profusion of flowers. I never saw it growing wild in this county.

“*Chlora perfoliata*, perfoliate yellow-wort. Has been found by the Rev. Mr. CALCOTT near Caynham Camp. This plant is said to prevent the cattle from eating the grass which grows near it. If this be true, great care should be taken to prevent its seeding, as, being an annual, it would by that method be destroyed. It is very beautiful.

“*Polygonum bistorta*, great bistort. Grows in some fields, about half a mile from Ludlow, by the side of the road leading from thence to Oakley Park. “The root is “one of the strongest vegetable astringents. The young “shoots are eaten in herb-pudding in the North of Eng- “land, and about Manchester they are substituted for “greens, under the name of patience-dock *.”

“*Paris quadrifolia*, herb-paris. In a wood near Bitterly Court.

“*Adoxa moschatellina*, tuberous moschatel. Under an hedge near Bedston, and in some other places not very far from Ludlow.

“*Elatine hydropiper*, small waterwort. On the eastern shore of Bomere Pool, near Condover, this little plant

* MR. CALEY.—WITHERING'S BOT.

was found by the Rev. Mr. WILLIAMS, in August 1798. It had never before been observed in Britain*.

“ *Chrysosplenium oppositifolium*, opposite-leaved golden saxifrage. About Bedston, and in other places with the preceding plant.

“ *Saxifraga tridactylites*, rue-leaved saxifrage. This very pretty little plant deserves notice, not only on account of its being uncommon, but for the beautiful red colour which it assumes. It grows on the tops of many of the garden walls about Ludlow.

“ *Saxifraga hypnoides*, moss-saxifrage. This rare plant grows on the summit of the Titterstone Clee-hill. It is to be seen in most gardens, forming a beautiful tuft, or an elegant edging to the borders, and covered with delicately white flowers during a great part of the Summer.

“ *Dianthus caryophyllus*, clove pink. On the walls of Ludlow Castle, and on some other old walls near to Ludlow. Few plants exceed this in beauty or fragrance.

“ *Dianthus deltoides*, maiden pink. I have seen this beautiful plant growing near Church-Stretton; and Dr. WITHERING says, it grows near Bridgenorth.

“ *Cotyledon umbilicus*, navelwort. This, though found in many parts of Great Britain, is not by any means to be considered as a common plant. Its beauty, as well as the singularity of its shape, deserves attention. It grows plentifully on the wall of Bromfield church-yard, and in some other places near Ludlow. The peculiarity of its leaves, which are thick, fleshy, circular, concave on the upper surface, with a hollow dimple in the centre, just opposite to the insertion of the central leaf-stalk underneath, sufficiently accounts for its name.

“ *Sedum telephium*, orpine stonecrop. In the fissures of

* See SOWERBY'S English Botany.

the rocks, near the summit of the Titterstone Clee-hill. It is so well known as a garden plant, that all remarks concerning its beauty are unnecessary.

“*Sedum reflexum*, yellow stonecrop. Common on many walls and rocks about Ludlow. This plant, as well as *sedum rupestre*, presently to be noticed, is cultivated in Holland, and in Germany, to mix with lettuces in salads. They make a very pleasant and elegant pickle.

“*Sedum rupestre*, rock stonecrop. This is superior to the preceding in beauty, but is not so easily to be met with, it being a very scarce plant. I found it growing abundantly on the top of the Titterstone Clee-hill. It grows at Downton Castle.

“*Reseda luteola*, dyers'-weed. Common in many parts of this county. “Cattle will not eat it, but sheep sometimes browse it a little. It affords a most beautiful yellow dye for cotton, woollen, mohair, silk, and linen; and is that which is most commonly used by the dyers for that purpose, as it gives the brightest dye. Blue cloths dipped in a decoction of it, become green. The yellow colour of the paint called Dutch pink, is got from this plant. The tinging quality resides in the stems and roots. It is cultivated in sandy soils, rich soil making the stalk hollow and not so good*.”

“*Potentilla verna*, spring cinquefoil. Near Downton Castle.

“*Comarum palustre*, marsh cinquefoil. This very beautiful plant grows in a pit near to Bedston very luxuriantly, and in considerable quantity. Wool may be dyed of a dirty red colour by means of its roots, which are said to be sufficiently astringent to tan leather. Milk appears richer and thicker if the pail has been rubbed with this plant. It

merits a place in our flower-gardens, and will grow well there if planted in a little bog-earth.

“ *Chelidonium majus*, greater celandine. Plentiful about Ludlow and the neighbouring places; and, from its size, the elegance of its leaves and branches, and the bright yellow colour of its flowers, is so conspicuous, that no admirer of the beauties of Nature can avoid observing it. It greatly adorns some of the walls near this town. Its roots insinuating themselves into the mortar between the stones, send out abundance of large and very elegant branches. The juice of this plant is very acrid, of a deep yellow colour, and stains the fingers or clothes of the same colour in such a manner that much washing is usually necessary to take it out. It is said, perhaps truly, that the juice will remove warts from the skin; though, from the deep stain which it gives, and the length of time during which it must be repeatedly applied for the purpose, it is not probable that many persons can be found who will not consider other remedies as preferable.

“ *Aconitum napellus*, monk's-hood. This plant, which is now, I believe, allowed to be indigenous, grows in an apparently wild state, in some places within a few miles of Ludlow.

“ *Ranunculus flammula*, lesser spearwort. Common in wet places. The distilled water of this plant is good to be given in case of poison having been swallowed, as it excites immediate vomiting, and is more safe than other medicines which have the same very speedy effect.

“ *Ranunculus hederaceus*, ivy-leaved crowfoot. Common in this part of the county. Though it is usually found in wet places, it will grow on the top of a wall, and it is then much more beautiful, though very small. It grows on the wall of Bedston church-yard.

“ *Sagittaria*

“ *Sagittaria sagittifolia*, common arrow-head. Plentiful in ditches and pools. This is well named from the shape of the leaves, which very much resemble the head of an arrow. At the lower part of the root there is a bulb which grows firmly in the earth. This bulb is an article of diet among the Chinese, who cultivate it on that account. The stems and foot-stalks discharge a white milky juice, which is an uncommon circumstance in aquatic plants.

“ *Galeopsis tetrahit*, nettle hemp allheal. Grows in some corn-fields near Bedston, by far too abundantly. It may also be found in some other places near to Ludlow.

“ *Galeopsis versicolor*, bee-nettle. On Caynham Camp, and near to Bedston, and in a few other places near to Ludlow.

“ *Galeopsis galeobdolon*, or rather *Galeobdolon luteum*, of modern authors, yellow Archangel. Is a common weed in this county. It grows in almost every hedge, and is far from being deficient in point of beauty. In many other counties it is, I believe, not a common plant.

“ *Stachys sylvatica*, hedge-nettle woundwort. Common in hedges and woods. It will dye a yellow colour.

“ *Melampyrum sylvaticum*, yellow cow-wheat. Near the Wetmoor, and in some woods near Bedston abundantly. Dr. WITHERING says, that cows, sheep and goats eat it; and, with a plentiful allowance of it, soon grow fat. It is rather a pretty plant.

“ *Antirrhinum linaria*, toad-flax, on account of its beauty must not be passed over in silence, though it is by no means peculiar to this county. “ An ointment prepared from the leaves gives relief in the piles. The expressed juice, mixed with milk, is a poison to flies, as is likewise the smell of the flowers*.”

* WITHERING'S Bot.

" *Antirrhinum majus*, great snapdragon. Though not common, is to be found on some walls in, and near to Ludlow.

" *Scrophularia nodosa*, great figwort. Heretofore supposed to possess medicinal properties, but it is now not used. The strong unpleasant smell, and bitter taste of its leaves, seem to indicate some active properties. A decoction of the leaves cures the scab in swine. Few if any animals, excepting goats, will eat it. Wasps are fond of its flowers. Perhaps this may arise from some resemblance which there may be between the smell of these flowers and that of meat which has been kept too long. It is a very common plant about Ludlow, and perhaps in most other places.

" *Sisymbrium tennifolium*, wall-rocket. On some walls about Ludlow.

" *Geranium lucidum*, shining crane's-bill. The fine polish, and the purplish-red colour, intermixed with green, which this plant assumes, render it an object so well worthy of attention, that few persons can have overlooked it, though they may not have been acquainted with its name. It delights in the top of a wall, or the side of a rock; and grows in great abundance on the rocks upon which Ludlow Castle stands.

" *Geranium sanguineum*, bloody crane's-bill. Near Downton Castle.

" *Genista tinctoria*, dyers' green-weed. Common near Bedston, and probably in many other parts of this county. A yellow colour may be prepared from the flowers, and for wool which is to be dyed green, the dyers prefer it to all others. It is probable that the flowers of *Primula veris*, cowslip, would dye a fine green colour.

" *Ornithopus perpusillus*, bird's-foot. Common on the
top

top of Whitliff, near Ludlow. The curiosity of this plant chiefly consists in the legumens or seed-vessels, which very much resemble the foot of a bird. Hence both the botanical and English names are well chosen.

“*Lotus corniculatus*, bird’s-foot claver. Very common in every part of the kingdom. Dr. WITHERING says, that the flowers become greenish when dried; in which respect they resemble the flowers of the plants which produce indigo. Cows, goats, and horses eat it; sheep and swine are not fond of it. In Herefordshire it is cultivated as pasturage. It is strongly recommended by Mr. ANDERSON. It might be cultivated to great advantage in moist meadows. “It grows to a greater height than any of the “trefoils, or than *Medicago lupulina*; and makes extremely good hay*.”

“*Hypericum dubium*, imperforate St. John’s-wort. This beautiful plant, which grows very abundantly in this county, and in Worcestershire, was mistaken for *Hypericum perforatum*, perforated St. John’s-wort, which frequently grows with it, till they were discovered to be two perfectly distinct plants, by Dr. SEWARD of Worcester, in July 1794.

“*Tragopogon pratensis*, yellow goat’s-beard. I mention this plant chiefly in order to remark, that I have observed it to shut its flowers about nine o’clock in the morning, on clear days, in Liecestershire; and I have been informed by an accurate Botanist at Edinburgh, that its flowers remain open till twelve, in clear weather, in that part of Scotland. This seems to shew the difference of climate in the two above named places, pretty strongly. I have not yet been able to make any observations respecting the time when the flowers of this plant shut in Shropshire.

* Mr. WOODWARD.

“*Inula helenium*, common elecampane. Near Marlow.
 “The root is esteemed a good pectoral. Dr. HILL says,
 “he knows, from his own experience, that an infusion of
 “the fresh root, sweetened with honey, is an excellent
 “medicine in the whooping-cough. A decoction of the
 “root cures swine that have the scab *.”—“Outwardly
 “applied, a decoction of it is said to cure the itch.
 “Bruised and macerated in urine, with balls of ashes, and
 “whortle-berries, it dyes a blue colour †.”

“*Erigeron acre*, blue flea-bane. On walls in Ludlow.

“*Centaurea cyanus*, blue-bottles. In corn-fields common. Mr. BOYLE says, the juice of the central florets, with the addition of a very small quantity of alum, makes a lasting transparent blue, not inferior to ultramarine ‡.”

“*Orchis bifolia*, butterfly orchis. Very common in many places near Ludlow and near Bedston; and in some other parts of this county. Its beauty alone is sufficient to recommend it to notice, but in odour it is inferior to few of the plants so much esteemed on account of their perfume. Scarcely any plants are more deserving of a place in gardens than this. Though it grows very abundantly here, it is scarce in some other parts of the kingdom, and has the character of never growing in great quantities together in any one place, but very thinly scattered over the countries which it inhabits. The odour of its flowers is by far more powerful in the evening than at any other time of the day. It bears being transplanted when in full flower very well; as do, I believe, all plants of the orchis tribe. Many other plants of this genus grow in Shropshire, but they are, in general, not uncommon elsewhere.
 “Mr. MOULT, in a letter to Dr. PERCIVAL, inserted in

* WITHERING'S Bot.

† LIGHTFOOT.

‡ Gentleman's Mag. 1748, March.

“ the Phil. Trans. vol. 59, p. 1, describes his method of
 “ making salep. The best time to gather the roots is
 “ when the seed is formed and the stalk going to fall, for
 “ then the new bulb, of which salep is made, is arrived
 “ at its full size. The new roots being separated from the
 “ stalk, are to be washed in water, and the outer thin
 “ skin taken off. They are then to be set, on a tin plate,
 “ in an oven heated to the degree of a bread oven. In six,
 “ eight, or ten minutes, they will have acquired a tran-
 “ sparency like horn, without being diminished in size.
 “ They are then to be removed into another room to dry
 “ and harden, which will be done in a few days; or they
 “ may be finished in a very slow heat in a few hours.
 “ Salep, thus prepared, may be sold for less than a shilling
 “ a pound, and affords a mild nutriment, which, in times
 “ of scarcity, in cases of dysentery and strangury, and on
 “ ship-board, may be extremely useful. See Percival’s
 “ Essays, Part 2, p. 37. Mr. MOULT made his experi-
 “ ments upon the root of *Orchis morio* only. It is highly
 “ probable that every species of orchis may be used indis-
 “ criminate. If ever plantations of orchis are made, the
 “ plants must be propagated by roots, for the seeds seldom
 “ come to perfection. Dr. PERCIVAL observes, that he
 “ got some seeds, to all appearance perfect, but they would
 “ not vegetate*.”

“ *Orchis ustulata*, dwarf orchis. On the side of the
 hill opposite to Downton Castle.

“ *Satyrion viride*, frog satyrion. Common in some
 meadows near Ludlow, though it is, in most places, a rare
 plant.

“ *Ophrys ovata*, twayblade. In a wood belonging to

* WITHERING’S Bot.

Mr.

Mr. WALCOTT, between Bitterly Court and the Clee-hill. Also in some other places in this county.

“*Serapias latifolia*, broad-leaved helleborine. A few specimens of this plant may be found in and near to Oakley Park, near Ludlow. In the neighbourhood of Bedston it is rather more common.

“*Parietaria officinalis*, pellitory of the wall. This plant forms an agreeable covering to the walls on the sides of which it grows. It was formerly used in medicine, but is now not supposed to possess any qualities which render it worthy of the physician's attention. It is said that weevils may be destroyed by strewing the leaves of it in granaries. Some say that it contains nitre. How far there is good ground for these opinions I know not.

“*Osmunda spicant*, rough spleenwort. Common in some woods near to Ludlow. Drs. SMITH and WITHERING, and Mr. ROBSON, now agree in calling this plant *Blechnum spicant*.

“*Osmunda lunaria*, common moonwort. In a meadow near to Ludlow.

“*Asplenium scolopendrium*, hart's tongue spleenwort. Common in many places in this county. Mr. LIGHTFOOT says, that this plant has an astringent quality, and is often used for burns and scalds, by way of ointment; and that it may be taken internally, boiled in red wine, in cases of hæmoptœ, diarrhoea, and dysentery.

“*Asplenium ceterach*, common spleenwort. I found this rare plant on some walls at Ludlow, where it flourishes very much. I never saw it growing in any other part of Shropshire.

“*Asplenium trichomanes*, trichomanes spleenwort. Very common in the neighbourhood of Ludlow. It has a very elegant

elegant appearance. I have often heard its beauty greatly praised by persons who did not know its name.

“ *Asplenium adiantum nigrum*, black spleenwort. A less common, but more beautiful plant than the preceding. It is by no means scarce about Ludlow.

“ *Asplenium ruta muraria*, wall-rue. On a wall in Mr. SNEADE's garden at Ludlow; and also on the wall of a sunk fence which divides the pleasure-grounds of Bitterly Court, the seat of Mr. WALCOTT, from the road. I have not seen it in any other part of this county. It grows on Wigmore Castle, Herefordshire.

“ *Polypodium dryopteris*, small branched polypody. On the side of the Titterstone Clee-hill, near its summit; and at Downton Castle, by the side of the walk on the left hand side of the river, leading up to the mill.

“ *Lycopodium clavatum*, club-moss. On Bedston-hill. “ In Sweden they form it into mats or basses, which lie “ at their doors to clean shoes upon. It restores ropy wine “ in a few days. The seeds flash when thrown into a “ flame, and, it is said, are used in theatres to imitate “ lightning. They are with difficulty made wet, and if “ scattered upon a bason of water, you may dip your hand “ to the bottom of the bason without wetting it*.”

“ *Lichen geographicus*, map lichen. On the rocks of the Titterstone Clee-hill, common; though, in general, it may be considered as a scarce lichen.

“ *Lichen niger*, black lichen. On a few stones by the side of the road leading from the top of Mocktree-hill to Marlow. Also near to Ludlow.

“ *Lichen ferrugineus*, rusty lichen. On stones and rocks, near Ludlow, common.

* WITHERING's Bot.

“ *Lichen Oederi*, on the Stipperstones.

“ *Lichen ventosus*, red-spangled tartareous lichen. Abundant on the rocks of the Titterstone Clee-hill. The pale yellow crust, and the fine red colour of the tubercles of this lichen, give it great beauty, and, at the same time, render it obvious at first sight.

“ *Lichen ericetorum*, flesh-coloured mushroom lichen. Grows, not uncommonly, on the sides of dry banks in this county.

“ *Lichen byssoides*, brown mushroom lichen. Frequent in similar places with the foregoing. Dr. WITHERING says, this is not a lichen, but is *lycoperdon equinum*, it having been found in the decayed hoof of a horse. Dr. SMITH, and most others, agree in retaining it among the lichens.

“ *Lichen bæomyces*, pink mushroom lichen. On the hill over Elton.

“ *Lichen tartareus*, large yellow-saucered dyers' lichen. On Whitliff-hill, near Ludlow, and in other parts of Shropshire. “ This lichen is much used by the Highlanders “ in Scotland, in dying a fine claret, or Pompadour-colour. “ For this purpose, after scraping it from the rocks, they “ steep it in urine for a quarter of a year. Then, taking “ it out, they make it into cakes, and hang them up in “ bags to dry. These cakes are afterwards pulverized, and “ the powder is used to impart the colour, with an addition “ of alum to fix it*.”

“ *Lichen perellus*, dyers' lichen. Common on rocks and walls near Ludlow. This lichen seems to have derived its name from a red colour which the French dye with it, and which they call *parelle*. Litmus is prepared from this lichen in London.

* LIGHTFOOT'S Flora Scotica.

"*Lichen concentricus*, concentric lichen. This scarce lichen grows very plentifully on the rocks of Whitliff, near Ludlow. The name is peculiarly descriptive of its mode of growth.

"*Lichen scruposus*, hollowed lichen. Common about Ludlow.

"*Lichen punctatus*. On the walls of Colonel CHARLTON's park near Ludlow, and in other places in that neighbourhood.

"*Lichen excavatus*. Common on the walls of Colonel CHARLTON's park; where may also be found a very delicate variety of it. Dr. WITHERING supposes these to be only varieties of lichen scruposus, but they are probably distinct from it.

"*Lichen hypnorum*. This plant was discovered by Mr. BOULTON, in Yorkshire, on Mount-Pellon, near Halifax, and he called it *lichen borealis*; but since that time it has been found in other places. I found it growing on Whitliff, near Ludlow, and gave some to Mr. SOWERBY, that he might shew it to Dr. SMITH, President of the Linnæan Society. I understand that Dr. SMITH, and some others, have agreed to call it by the name which I have used above. A figure of this lichen may be seen in "SOWERBY's English Botany." It also grows in great perfection on a hill near to Caynham Court.

"*Lichen sphærocephalus*, has very lately been admitted as a British lichen, and has received the above name from Dr. SMITH, and others. I found it on an old oak tree near Stone-house, about a year since; and, being at a loss for its name, carried some to Mr. SOWERBY, that I might, through him, have Dr. SMITH's opinion respecting it. A figure of this lichen is since published in the above-named work of Dr. SMITH, entitled "SOWERBY's English Botany."

tany." To that work I refer the curious for a full and accurate description of this lichen.

" *Lichen omphalodes*, corker. On the Titterstone Clee-hill. " It dyes wool of a brown-reddish colour, or a dull " but durable crimson, or purple, paler, but more lasting " than that of orchall. It is prepared by the country " people in Ireland by steeping it in stale urine, adding a " little salt to it, and making it up into balls with lime. " Wool dyed with it, and then dipped in the blue vat, " becomes of a beautiful purple; with rotten oak it makes " a good dark-brown frize. Wool dyed with red-wood, or " sanders, and afterwards in corker, becomes of a dark- " reddish brown *." — " It has been used as a styptic †."

" *Lichen olivaceus*. Very common, and would not have been mentioned, but for the sake of adding, that in this county it is very frequently covered with shields, whereas it is generally supposed not very often to produce any. The shields are more plentiful on the specimens which grow on the small branches, than on those which are to be found on the larger branches or trunks of the trees.

" *Lichen crispus*. Common on old walls, and on rocks about Ludlow.

" *Lichen cristatus*. Common in similar places with the last-named lichen.

" *Lichen subimbricatus*. This grows with the two last-mentioned lichens, upon walls, except with this difference, that the other two chuse the mortar or dirt between the stones to grow upon, whereas this is usually, if not constantly, found on the face of the stone.

" *Lichen venosus*, veined lichen. This lichen was, I believe, not known to grow in any part of England, till I

* RUTTY.

† WITHERING'S Bot.

discovered

discovered it on the side of Whitliff, near Ludlow. I sent some to Mr. SOWERBY, who has since favoured us with a figure, and Dr. SMITH with a description of this very rare and curious lichen.

“*Lichen polyrhizus*, dusky-rock lichen. On the Stipper-stones.

“*Lichen calicaris*. This lichen, which usually grows near the sea, abounds on some trees near the seat of S. DAVIES, Esq. at Wigmore. On the same trees I also found the tubercular variety of this plant.

“*Lichen floridus*. Common on old oak trees in many places near Ludlow. Its peculiarity and beauty well deserve the attention of the curious.

“*Lichen furcatus*. Abundant on the Titterstone Clee-hill.

“*Lichen lispidus*. This grows plentifully near the summit of the same Clee-hill with the foregoing lichen.

“*Lichen scrobiculatus*. In Oakley Park; in the woods near Downton Castle, and on Caynham Camp.

“*Lichen fragilis*. On the Titterstone Clee-hill, and on a hill near to Bedston, plentifully.

“*Lichen sinuatus*. About Wigmore, and also on the rocks about Ludlow, this scarce lichen may be found.”

SECT. II.—ARTIFICIAL GRASSES.

“THE grasses cultivated are broad-leaved clover, red and white Dutch clover, trefoil, and rye-grass*.”

“The broad or red clover frequently goes out of the land the first winter : we, therefore, now generally add an equal quantity of trefoil with it, and about 4lb. of white Dutch clover, and one quarter of a bushel of rye-grass per acre. Where lands have been long tilled or exhausted, after these seeds have been sown let the land rest a few years, and be hard stocked with sheep, and I believe it will answer better to the farmer than laying out large sums in purchasing lime. As a number of horses must be kept on an arable farm, they ought not to be suffered to run over the clover, but that it should be cut and given them in the stable †. Green vetches I consider as still preferable. Let a field be sown with winter and spring vetches, and at different periods, so as to yield a succession of green fodder for the draught horses : when an acre or two are cut, sow turnips, and continue doing so as the vetches are taken off ; the crop will be worth from 20s. to 2l. per acre. Turnips may profitably be sown till the middle of August ‡.

“The use of a few acres of vetches on a clean wheat or barley stubble, to be sown part in September, part in March, and the remainder in April, is found very advantageous to supply with summer keep in the stable, all the working horses of the farm ; a deal of manure is collected, and trespass and danger by the horses avoided §.”

* MR. TENCH.

† On the subject of giving green food in the house, there are very ample details in Mr. POWIS's Letter, in the Appendix, and upon most other subjects ; I was unwilling to interfere with so valuable a communication, and having received it as a whole, it is printed entire.

‡ EDWARD HARRIES, Esq.

§ MR. APPLEBY.

Ray

Ray or rye-grass may be so far preferable to common hay-seeds, that the seed is ascertained; but as the weeds of a field may be principally in seed when grass is mown, hay-seeds cannot be depended upon, unless from meadows that are weeded. I doubt whether the narrow-leaved plantain, or cock-grass, or ribwort* is so valuable as has been commonly imagined. I sowed a large field with its seeds, mixed with white and yellow trefoil. The cock-grass was very luxuriant before the other seeds produced many leaves; and by turning sheep, cows and horses at different times into this field, I could perceive that the former was no favourite food with any of these animals, though I believe each sort will eat it.

* *Plantago lanceolata*. The *Plantago maritima* is by some authors called narrow-leaved plantain.

CHAP. IX.

OF GARDENS AND ORCHARDS.

I KNOW no particular object of horticulture for which Shropshire is celebrated, but there are gardens walled round, and well-cultivated, with a proportion of hot-houses, fruit-houses, &c. belonging to most of the principal seats. The farmers have moderate-sized gardens, containing some pease, more beans, a bed or two of carrots, one bed of onions, some turnips and potatoes. The labourers have principally potatoes and beans in their gardens: some have carrots and onions; few grow pease, from their not having sticks to rod them with. The scarlet-flowering French bean is indeed found in both the last sorts of gardens, and where the labourer has no rods, they are supported by strings depending from the sides of the house. The dwarf-pease should be given among the labourers by those who can procure the seeds, as they bear well, and want no rods. I would recommend the Mazagan bean as a good bearer, and as a very well-flavoured pulse, to those who think the Windsor, or long-podded beans, strong of taste. The Mazagan is not much larger than a horse-bean, but will degenerate and grow large if the seed is not frequently changed, though the necessity of doing so may be put off for several years, by choosing the smallest beans for seed. The dwarf-bean is nearly as well-tasted as the Mazagan, and in small gardens, crops that cast no shade are valuable. The white-blossomed bean is very little larger than the Mazagan, and has still less of the bean flavour: it

boils

boils of a pale-green colour, and when old is almost black, though the blossom is pure white.

At Longnor-hall, the melon-beds have been made for some years with oak-leaves, which are raked up in the park and woods, as soon as they fall from the trees, and put together in large heaps, where they become solid and ferment, and by this means furnish a material to compose hot-beds with, the heat of which is more regular and constant than that from horse-dung. In the hot-houses, also, a quantity of these fermented oak-leaves are used. Clover-dust, that is, the dust into which the head of the plant is beaten in getting out the seeds, is used also in these hot-houses, and furnishes a good heat. The value of clover-dust for this purpose, or as a top-dressing for meadows and grass-land, is very considerable.

Many farmers have small orchards, from whence they make a little cyder for home consumption, and on the confines of Herefordshire and Worcestershire the orchards are larger, and cyder is made for sale.

CHAP. X.

WOODS AND PLANTATIONS.

NOTWITHSTANDING large yearly falls of timber, there are still some very fine woods of oak growing in this county. There is a good deal of hedge-row timber also, consisting of oak and ash principally, a few wych and other elms, still fewer beech, lime, and sycamore. Poplars are not uncommon by the sides of brooks and small rivers. There are a few yew trees, and hollies have been plentiful, but that beautiful tree and useful fence appears to have been neglected or destroyed. Birches, both as a tree and fence, are common in the S.W. district. There are many modern plantations of various sorts of firs and pine, generally mixed with different deciduous trees. At Linley, near Bishop's Castle, are plantations of larch, Scotch and spruce firs, as old, I believe, as most plantations of the sort in South Britain. Mr. MORE planted each species in considerable masses, instead of mingling them. He raised also indigenous trees in considerable quantity, and had a large collection of the rarer sorts. Though there may be a call to plant in this country, still the duty is not so imperious a one, that it should be universally entertained. Like many general duties, it should yield to circumstances; and trees should not be reared in any quantity upon land that may be made subservient to agriculture or profitable pasture. When we are independent of foreign corn, we may calculate more minutely, probable importations of timber. Where trees can be planted to most public

lic advantage, it generally happens that the scite is consistent with individual interest, and beneficial to public beauty. Proprietors of land should not make their plantations upon the plan of a garden near towns, where the surrounding objects must be shut out; they should study the general effect of the country at large. Plantations upon a flat, generally occupy land that may be turned to better account, and they hide the view of the country. Upon the sides of hills, they substract little from human sustenance, and may add to the beauty of the prospect, if properly managed; for instance, it is best that the ridge of a hill that is planted should appear above the trees, unless the wood is of oak, or of such kind of trees as form round in the top. Of pines, or firs, the Scotch is the only one* that does not continue to grow spiry, and wherever their upright shoots are seen in contact with the sky, the harshness of these sharp points ill accords with the soft and swelling outline of the clouds. In some counties the whole face of Nature is spoiled by the hedge-row elms, in every stage of nakedness or partial growth. With us, the hedge-row timber is not so unsightly, but it often hinders the view of hill, of wood and dale, and is generally found much damaged in consequence of lopping, and it is injurious, rather than serviceable, to a tenant; for the fall of the leaves in Autumn, prevents the grass from being eaten close down, and the butter from cows, in a pasture where many leaves fall, is often tainted thereby. It seems therefore better, that the proprietors of estates should endeavour to preserve what, in their several situations, may be a proportionate quantity of timber in woods, rather than trouble themselves with raising or sustaining hedge-row timber. There is a false

* The cedar of Lebanon is sometimes spiry, but more frequently flat or rounded.

notion prevails, that shredding or trimming the side-branches from poplar trees, promotes their growth; whereas the bulk and roundness of every tree will be in proportion as the side-branches are regular and undisturbed. A tree that has lost its branches on one side only, will be flat on that side and round on the other. Weymouth pines, I have understood, are the best timber for masts, but do not bear a westerly wind. Larches are quick growers at an early age, and good timber, but want shelter from the west wind. Silver firs grow fast when of some age, and, I am told, flourish in as high situations upon the Appenines, as any trees whatever, except beech and sycamore. The Scotch pine is hardy, and of equal beauty with any, when used fairly, but has rarely sufficient room. Its wood will work smoother than larch, but is softer. There are many thousand acres of coppice-wood in this county. Their value depends much upon situations; but perhaps they do not pay more than 7s. an acre yearly, upon the average. As fire-wood, the demand is diminished, from the increased consumption of coal, and which is still increasing, by means of turnpike-roads and canals; and for forges, wood is in less request than heretofore. Many sorts of iron are now manufactured with preparations of coal, which could only be worked with fires of wood 20 years ago. It is no improbable supposition, that the demand for coppice-wood will continue to decrease, in proportion as the art of making iron is better understood.

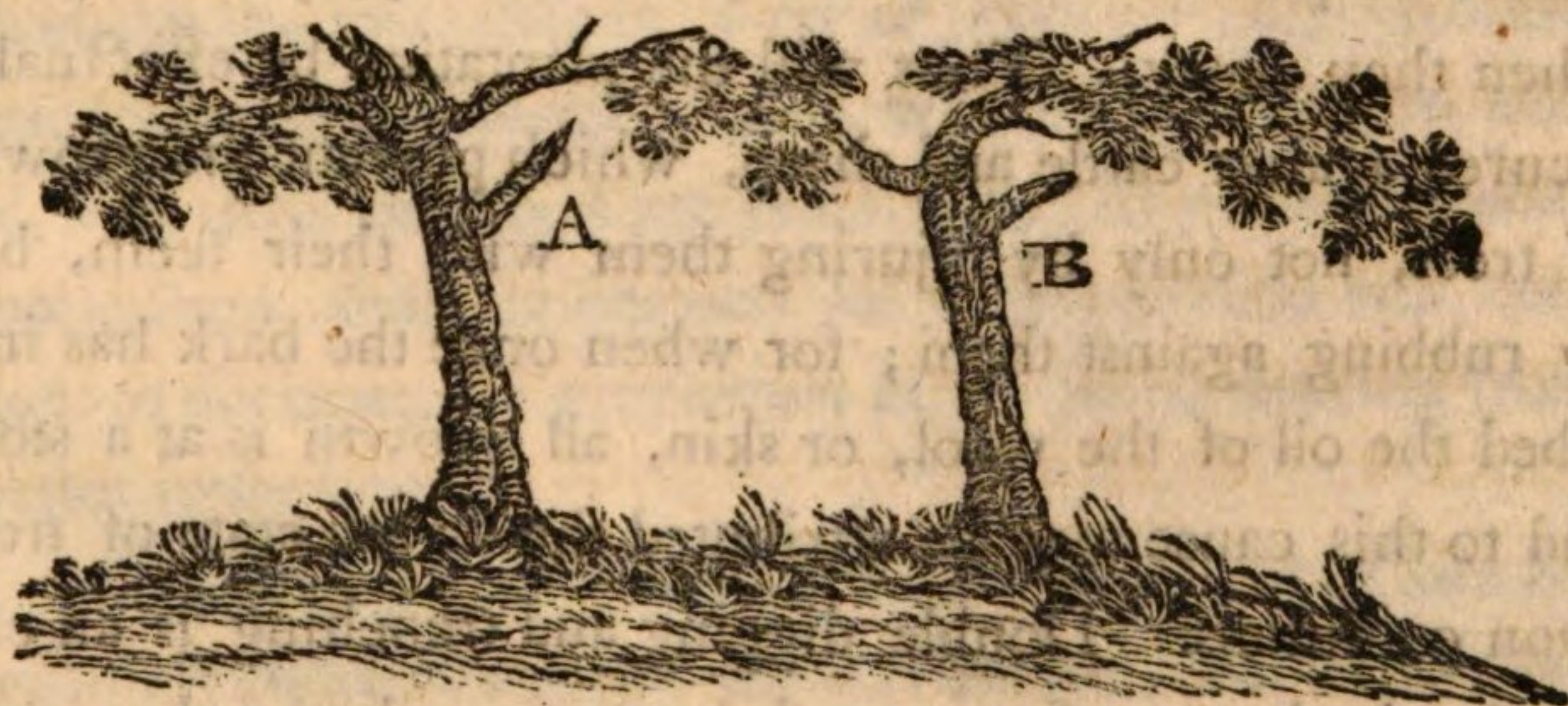
“Timber in this county, like all others, has of late been infinitely more destroyed than preserved; nor does it seem to have been considered as an article of future value; crops of grain, &c. producing a more expeditious return of profit to the cultivator, the advantages to be derived from planting have seldom occupied his thoughts. Planting indiscriminately,

nately, is as absurd as a total neglect of it. Attention should be paid to the soil, situation, and other circumstances; for instance, if a field is so circumstanced that manure cannot be brought to it but at an amazing expense, if the soil is of a wet nature, and consequently the working of it attended with uncertainty, and at the same time is poor, in all probability (upon calculation) it may be found to be more suitable to trees than to any other mode of cultivation. There are few trees which do not succeed well in Shropshire, provided proper attention is paid to the planting, and afterwards the securing from cattle and sheep, many of which are brought from Wales; and having been accustomed to the hills and bare pasturage, can with ease get over any common fence, and are very apt to do so, for the sake of a little fresh grass which they may pick up amongst the plants. The best fence I have found, has been a single post and rail, with a paling of the roughest and cheapest materials; one end driven into the ground, and the other nailed to the rail. A ditch about sixteen inches wide and of the same depth, will be necessary to keep cattle from rubbing off the pales. A quickset or white-thorn hedge should be planted within the pales, to supply their place when they decay. Thus will the plantation be effectually secured against cattle and sheep, which prevent the growth of trees, not only by injuring them with their teeth, but by rubbing against them; for when once the bark has imbibed the oil of the wool, or skin, all growth is at a stop, and to this cause may be attributed the dwarf state of trees upon commons. Double digging and trenching is an expensive business at first, yet I have not a doubt that were two acres to be planted, one in the common method, and another after having been well trenched, that the quantity of wood in the course of 15 years, would be nearly double

upon the latter to the former ; though the trees might have been taken together from the same nursery, and as much as possible upon an equality.

“ Though all trees grow well in Shropshire, yet I know of none so luxuriant as the beech upon a dry soil ; and there are trees which are supposed to have been planted about 90 years ago, which girth nine feet at the height of six feet from the ground.

“ By property being much intermixed in Shropshire, it follows, that gentlemen cannot be resident upon, or in the habit of seeing such parts of their estates very frequently, as are at a distance from their houses ; this operates much to the injury of the timber ; for tenants have no scruples about lopping the best trees for fuel, or other purposes, provided it can be done with impunity, notwithstanding coals may be had on moderate terms : in addition to this, they not only cut off luxuriant boughs, but perform it in the most idle and prejudicial method possible, by striking downwards, and consequently leaving the stump in a ragged state, exposed to the weather, and acting as a conductor of the rain to the heart of the tree. See A.



“ If a bough is to be detached, the cut should be made with a sharp instrument on the lower side, and as smooth as possible (see B) ; in which case, no rain would probably fall

fall upon it; but should that happen, it would not lodge, from the surface of the wound not being of a nature to retain it, as it would be after being cut with a saw, or as before described: the wound might be effectually secured by FORSYTH's composition, or some other of a similar nature. Ash is universally esteemed a prejudicial tree to the farmer, though at the same time the most useful to him of any that grows, all implements of husbandry being principally composed of it; proper places should therefore be set apart, and appropriated to the growth of it; and as it succeeds well on turf or boggy land, it would be no difficult matter to find spots suitable to it.

“ It is much to be lamented, that the narrow-leaved elm is a tree so difficult of propagation, and that it can be raised in no readier manner than by layers. No tree does so little injury to land or hedges, and no one is of more value, except the oak *.

“ A singular custom prevails in this county, which tends wonderfully to the consumption of oak timber, few persons consenting to bury their relations in coffins of any other wood; and not content with this, the best possible pieces of timber are selected for the purpose. If the legislature thought it once necessary to enact a law to oblige the use of woollen in funerals, to encourage a *manufacture*, there can be no doubt of the propriety of prohibiting the use of oak upon such occasions, when the bulwark of the nation is in want of it. As farmers are frequently in want of small

* “ The narrow-leaved, or Worcestershire elm, does not grow kindly, except in sandy or light loamy soils, and good gravels. A tree of far superior value, is the broad-leaved wych elm, very common in this county, though unknown in many others. For naves of wheels, it is perhaps the best wood known, and will grow in almost every kind of soil, though it succeeds best in a stiff or clayey one.”—*Mr. Wilding.*

wood, it may be proper to appropriate an acre and a half to be planted with ash and spring coppice-wood, that a quarter of an acre may be cut every year, which would supply handles for spades, and other such implements, and the tenant would then have no excuse for lopping the trees upon his farm*.”—I would add to these observations, that Mr. LLOYD planted extensively, and twice obtained a premium from the Society of Arts; he had one medal for a plantation of oaks exceeding 50,000.

“ This county was remarkably well furnished with oak timber, and still retains more than any other that I am acquainted with. Great supplies have been sent to Bristol for ship-building, and the stock has been greatly diminished within the last 30 years. There is still sufficient remaining for our domestic consumption, and other markets. Strong soils that are best adapted to its growth, are better employed in the growth of corn, where the plough can work, or in pasturage. It may still be profitable to keep rugged side-land ground for the growth of oak; but I agree with Mr. A. YOUNG, “ that introducing wood where corn grew, is “ returning it again to its wild uncultivated state.” I know several woods, from 80 to 120 years growth, by no means at maturity, which, under a course of agriculture, would have produced ten times its value. I believe we are not in danger of having too much land in wood; few can wait the return of a century. No object can be placed near a mansion, that has equal beauty to a grove of oaks. An estate without a proportion of timber, may be compared to a house without furniture. Underwoods are very extensive; they consist chiefly of oak, and the greater part are in such soils and situations, as make the best return that could be expected. Large quantities of oak poles are used

* Late Rev. Mr. LLOYD, of Aston,

for different purposes in the coal-pits; as they are required to have some strength, they are seldom fallen before 24 years growth, and the bark (used in tanning leather) is an object of great importance, and now sells at an high price. Birch will answer for coal-pit wood, but is not so valuable. Ash is used for hoops, and the tops are converted to chairs by the turners. On the side of Shropshire, near Bewdley, in Worcestershire, is a large tract of underwood fallen at 18 to 21 years growth, for converting into charcoal for making bar-iron. In one of these coppices, adjoining Mr. CHILD's park at Kinlet, there have been trained up young timber-trees that are very promising, and will make one of the finest woods of oak in our county. On the estates of Lord CLIVE, and other proprietors, plantations have been raised for ornament. These consist chiefly of larch, and fir, and beech, as being of quickest growth, and sometimes oaks are intermixed; and where the soil is favourable, and the other trees are removed when they encroach upon them, they may answer in nursing their growth; but unless the oak is regularly furnished with side-branches, the trunk becomes of too much length, and it will never arrive at any great bulk. Our hedge-rows have furnished a great quantity of oak and ash, and some elms, though generally much injured by cropping. In this respect, Warwickshire is the county that should be a pattern to others: in the part that I am most acquainted with, the hedge-rows have very fine timber that is uninjured. The ash in particular, though useful to the farmer for implements, should not be suffered in hedge-rows: the injury to the crop during its growth, is ten times more than its value when fallen*."

"There is no doubt but oak timber now planted, would pay the common rent of the soil; and I hope the time is not

* EDWARD HARRIES, Esq.

far distant, that government will direct a considerable quantity of the crown lands to be planted, and to be put under the inspection of daily surveyors, whose attendance should be as rigidly looked into, and checked, as that of the excise officers. Small houses should be erected at convenient distances round the plantations, for their habitations*.”

* Original Report.

CHAP. XI.

WASTE LAND.

“ IN comparison of many other counties, this may be called an enclosed one, particularly in respect of field-land ; yet there certainly remain many commons, though few of large extent, which would still pay well the expense of enclosure. One of the most considerable is the Morf, near the town of Bridgnorth.

“ As to the extent of the commons, I would beg leave to advise that a surveyor may be sent into each county, with instructions to take as many lines over each common, as would pretty nearly ascertain the quantities ; this method would not cost the Agricultural Board more than thirty guineas, on an average, for each county ; and at the same time and expense, the worth of the wastes may be ascertained, by supposing them in a state for enclosing, for in their open state the value of the best is but trifling *.”

“ A large quantity of wastes have been enclosed and improved, but too many still remain. The Morf, near Bridgnorth, is five miles in length, and may be two or three miles in width, and there are smaller commons, amounting to some hundred acres, not far from it ; all of which are highly capable of improvement from enclosure : these would soon be made of the value from 12s. to 1l. per acre. There are several large commons in the road from Shrewsbury to Drayton ; these are of much inferior

* Original Report.

value, but still capable of being made profitable: on the very worst parts of them the Scotch fir would thrive. A general enclosure bill for commons not exceeding 500 or 600 acres, would very soon cause many thousand acres, that are now in a very neglected and unprofitable state, to be brought into cultivation: the expense of a private act precludes the proprietors of such from applying to Parliament; and we know that one obstinate man will prevent its being done by private agreement. Such commons, therefore, are likely to remain as they are. The extensive commons between Church-Stretton and Bishop's Castle, and beyond Clun, to the borders of Radnorshire, are so elevated and so well calculated for sheep-pastures, that perhaps they cannot be better applied *."

Having made some observations under the heads of Enclosing, and of Cottages, that may with equal propriety have appeared in this Chapter, I have little to add in this place, except that the extensive Forest of Clun, the Longmynd, and other wastes alluded to by Mr. HARRIES, may certainly be enclosed to advantage. Good grain has been reared this year upon some parts of the Longmynd recently enclosed; and the parts of that, and of the other hills, more particularly calculated for keeping sheep, may be applied in severalty for that purpose to more advantage than at present; whilst other spots may be converted into good meadow and arable land. I conceive also, that new enclosures add to the value of the old ones. They become more sheltered; the fences are more easily preserved, and the farmers can apply that time to their cultivation that was before taken up in looking after flocks on the open grounds.

* EDWARD HARRIES, Esq.

“ About 20 years ago there were large tracts of lands (Baggymoor, and other moors from near Boreatton to St. Martins) in the Winter usually covered with water, but which are now, in consequence of enclosures and drainage, at no great expense, rendered of considerable value. Hither wild-fowl of all sorts usually resorted, and astonishing quantities were annually taken at the decoy near Whittington, the property of Mr. LLOYD, of Aston, but which, from the above improvement, has been deserted by the ducks, &c. and has been suffered to go out of repair, never again, probably, to be appropriated to its former use. The lands have been laid dry by large open ditches, which have served as fences. The grass is of a coarse nature, but where paring and burning have been adopted, these meadows have amply paid for the improvement, so that all the farmers who have such land are treating it in the same manner. Upon poor upland, where the soil is strong, an excellent crop of wheat may be had after buckwheat has been ploughed under, even with little or no manure.

“ There are several large mosses in Shropshire, and a very great number of smaller ones—With respect to large mosses, there can be no doubt of the propriety of draining and improving them, as the extent is sufficiently great to pay the expense of a main-cut or level; but the same does not hold good as to the smaller, as they are frequently situated in hollows, surrounded on all sides by high land, so that it is next to impossible to take the water from them, unless at an expense exceeding the value of the land when so improved. The drainage of these mosses must therefore be guided by circumstances. If the moss requiring to be drained, should be surrounded by sandy or gravelly land, it is not impossible that a well sunk into a
stratum

stratum of sand or gravel, might, for a time, carry off the water, but in a course of years it would probably become puddled, and consequently no longer able to perform its office. Advantage might, however, be taken of the time of the water being off, to open a hole in a dry bank as contiguous as possible, from which any heavy materials of soil might be carried upon the moss by men with wheelbarrows on planks. In large concerns, carts and moveable iron rail-roads would, perhaps, upon calculation, prove more beneficial; but this must be guided by circumstances. The land, when once made good, would possibly make it worthwhile for the owner to sink another well, as in the first instance, or to adopt some more expensive and more effectual mode of keeping it dry; but calculation must determine all these matters*.”

“The chief district of moor-land surrounds the village of Kinnersley. This swampy tract seems capable of great improvement by draining, as some meadows which have been thus improved bear witness †.”

IMPROVEMENT OF THE COMMONS.

“On this head surely it is not necessary, at this time of day, for myself or any other person, to say any thing more than enclose them all as soon as convenient. The idea of leaving them in their unimproved state to bear chiefly gorse bushes, and fern, is now completely scouted, except by a very few, who have falsely conceived that the enclosing of them is an injury to the poor; but if those persons had seen as much of the contrary effects in that respect as I have, I am fully persuaded their opposition would at once cease. Let those

* The late Mr. LLOYD, of Aston.

† Mr. ROWLEY.

who

who doubt, go round the commons now open, and view the miserable huts, and poor, ill-cultivated, impoverished spots erected, or rather *thrown together*, and enclosed by themselves, for which they pay 6d. or 1s. per year, which, by loss of time both to the man and his family, affords them a very trifle towards their maintenance, yet operates upon their minds as a sort of independence: this idea leads the man to lose many days' work, by which he gets a habit of indolence; a daughter kept at home to milk a poor half-starved cow, who being open to temptations, soon turns harlot, and becomes a distressed ignorant mother, instead of making a good useful servant. The surrounding farmers, by this means, have neither industrious labourers or servants, therefore the commons with the cottagers around, become a great burden instead of a convenience; for most certain it is, that in all the countries where this is the case, the labourers are generally indolent;—and the contrary is the case where they live under the farmer, in comfortable cottages, with only a quarter of an acre of land, work every day in the year, and have their children taught to read, and put out to labour *early*. This I have been a witness to, not only in my own parish, where we enclosed a common and fields 25 years ago, but in many other places since, where I have been concerned. To do any thing for a poor man and his family (who are to be maintained by their own labour) which gives them the habit of indolence, is the same as taking the rich man's income, for both alike become helpless. I am aware that it will be said by some, How then are the poor to obtain houses? I answer, by taking off the objection to houses being built by their employers, the freeholders, and opulent persons, as the laws of possession now stand. The objection to poor possessors are, that as soon as the owner of a house takes into it a

poor person and family, he finds himself bound to them, even if thieves, or persons of the worst behaviour. The possessor, feeling his weight in this respect by his poverty, puts the landlord to defiance; and if he should not know this himself, he can easily find those who will instruct him to with-hold possession, so as to put his landlord (under the best management on his part) to 10l. expense, before he can eject him, which is at once six or seven years income of the premises.

“There cannot, I conceive, be any danger of opposition to this alteration; for the gentlemen of the law, whose professions are liberal as well as profitable, for so good a purpose, will readily give up the loss of these poor clients, in the supporting of whom, against their landlords, they have but seldom got much credit; therefore, I would propose for houses with land, at any rent not exceeding 2l. 10s. yearly, and not being under an agreement in writing to the contrary, the tenant having had six months previous notice in writing, from his landlord or agent, for quitting at next Lady-day, and not quitting, but holding over by the space of three days, that the owner or his agent may apply to one of His Majesty's justices of the peace, who should, with all convenient speed, summons the parties and their witnesses, and if upon such inquiry, and hearing such notice, as aforesaid, it shall be found to have been regularly delivered, at the party's dwelling-house, &c. that in such case, the justice shall grant his warrant to the constable and parish-officers where such complaint arose, to empower them to serve the officer of the parish to which they are ordered to be removed, with a notice of the order; and if such officer, for three days, omits giving a security for abiding by the decision of the court of quarter-sessions, then to immediately take and convey the said tenant and family,

family, with their goods, to the officers of the parish whereunto they belong, who should be directed to provide for them as in cases of other removals. But in case of an appeal to the sessions, by the parish to which they were removed by agreement aforesaid, the removal to be postponed until a decision be made.

“ This alteration, I am fully persuaded, would occasion persons in general to build houses for labourers and artificers, whenever they are wanted, and would be a means of preventing poor persons from making miserable erections, upon inconvenient places within the wastes and lanes, which in the course of 20 years generally became the property of Lords of the respective manors; and the poor, as before stated, would have comfortable habitations, in proper situations convenient to their respective labour, and not incommodious to the country gentlemen or freeholders who are their employers: and that subordination of the lower rank of society, which in the present times is much wanted, would be hereby considerably secured*.”

* Original Report.

CHAP. XII.

IMPROVEMENTS.

SECT. I.—DRAINING.

“ THERE is much draining done by the best farmers, both with stone and wood, and it is now generally well understood ; but in many situations, particularly in clay countries, the materials, as stone, &c. are very expensive, occasioned by getting, and the distance it is to be carried ; and thin soil upon clay requires the drains in many places to be not more than from six to eight yards asunder, which consumes large quantities of materials. I have made what I call a brick arch, for that purpose, full an inch thick and a foot long, nearly of the shape of a ridge tile, but being not more than five inches wide at bottom, and six inches semi-diameter, it cannot possibly be used in building ; but such having been made at a brick-kiln, the excise-officer thought them taxable, and charged them 2s. 6d. per thousand, as common bricks. Two members of parliament did me the honour to represent this at the proper office, in London, in hopes of getting off the tax, which has not yet been done. This has checked the use of them, for nothing can be more irksome, than a tax upon a material to be used in an essential improvement upon land ; besides, there can be no more lawful pretence for taxing the arch of that shape, under the brick act, than there is for taxing the earthen pans and cups at a pottery. These arches
may

may be made, when common bricks are at 15s. per thousand, without tax, at about 30s. per thousand, which will lay a cavity of six by five inches, and near 340 yards long. The expense of laying is trifling after the drain is cut, and if the soil is thin, the filling up is soon performed by laying the sod upon the arch, sward downwards, and casting away the clay. If the drains are deep, lay wood, rock stones, or screened gravel upon the arch, and the sod upon the top of those, but no clay. If there are sand pans, or parts in the drains that would cause the arch to sink, lay two small bits of wood across, under and near the end of each arch *."

"Draining is one of the greatest improvements in this county. It is chiefly done with stone, and is contracted for by professed drainers at 6d. per rod of eight yards †."

"There are but few of the farmers in this neighbourhood who have, till lately, paid much attention to draining their lands, a considerable quantity of which would be much improved by so doing; the materials are chiefly of stone, and covered with turf, straw or rushes ‡."

"Mr. ELKINGTON having undertaken to instruct pupils from the Board of Agriculture in the art of draining, and as his mode is said to be far preferable to any other yet discovered, it is only necessary to observe, that when his system becomes better known, there will be ample room for proving its effects in this county. When morasses are made dry by open drains, the soil should be removed in wheel-barrows as it is cut, otherwise, by remaining on the edge it unites the texture, and prevents the water from issuing freely out of the ground §."

"I would have an act of parliament, giving the use of

* Original Report.

† Mr. TENCH.

‡ Mr. ROWLEY.

§ The late Mr. LLOYD.

water to the land-owners on the seventh day, when the millers might rest from their work ; liberty to use it when there is a surplus, and no damage can be proved ; to empower a district to levy a rate for a general drainage, and to keep it in repair ; to form an embankment when wanting, with directions for opening the sluices at times approved of by a majority of the proprietors. With such powers, there are several tracts within my knowledge that would be greatly benefited*.”

A good deal of draining is done in this county, by spades of three different breadths, and scoops to fit the size of the two smaller ones ; the first, or common spade, cuts out the turf, and the other spades and scoops work in succession. The drain is then filled up with stone, generally large pebbles, to the height where the second spade began to work ; the turf cut out by the first spade is then placed with the grass downwards, and the remaining cavity filled with soil. This answers both in grass ground and arable land.

SECT. II.—PARING AND BURNING,

“ THERE is some paring and burning done here in the thin soil, or sour swards upon clay ; but the paring is performed near two inches thick, the sward is laid round a small faggot of wood, large enough, when burnt, to blacken and scorch the sward reared round it, these burners not holding it good to reduce it to red ash. Thus, in its coarse, but scorched state, it is spread upon the land when ploughed, being first got into rows to make way for the plough ; and most certainly these blackened lumps, &c. do often produce an extraordinary crop of wheat, though upon land

* EDWARD HARRIES, Esq.

not worth more than seven shillings per acre, and the succeeding crops generally answer as well*."

"Paring and burning is rarely practised, unless upon breaking up of commons, and then but seldom †."

"Paring and burning is not at all practised here, to my knowledge ‡."

"Moderate crops of wheat are obtained by common culture, but grounds that are pared and burned, are very luxuriant, and almost equal the fertility of the richest soils, and the sample of the wheat, when brought to market, is said to excel that from other lands, however managed. EVELYN's caution is observed on this occasion by our husbandmen: "they torrify it into blackness, but proceed "not to adustion beyond that degree." This method of cultivation is attended with considerable expense, but the farmers generally repay themselves by three successive crops. Will it not be worth while to encourage them in this mode of husbandry, as they seldom burn any grounds but such as are barren and unprofitable, such as are covered with heath, gorse, &c. some of which, in the present state, are not worth more than two shillings per acre ||?"

Where there is a surface of rushes, or of very coarse grass, and where the ground is laid down to grass after a single crop, paring and burning may answer well. But I have seen it practised on land in this county, where there was no weed of peculiar tenacity to be destroyed, and where the custom has been to take two or three crops of grain before the land is again converted to grass. Under this management, I should think paring and burning must be very prejudicial. The ashes so produced are undoubtedly a good present manure; but when old swards are ploughed in, the land becomes very luxuriant by the third

* Original Report;

† EDWARD HARRIES, Esq.

‡ Mr. TENCH.

|| Mr. ROWLEY.

year, in consequence of the grass and roots having rotted, and being mixed with the soil. If they are then laid down with grass-seeds, they answer well; and if they are continued in tillage, they are calculated to receive peculiar benefit from lime, by means, probably, of the vegetable salts that abound from the rotting of the turf.

SECT. III.—MANURING.

“THE manure is chiefly farm-yard dung, lime, and marl*.”

“Lime is purchased at the different works in this county, for about 10s. or 12s. per waggon-load of from 40 to 50 bushels, and large quantities of it are used throughout the county. To the general use of it, some attribute the great improvements of our lands, and observe, that we now raise excellent wheat, where, before the application of lime, we only grew rye, which is very true. But I have doubts of its arising from this cause. It is generally allowed, that upon bringing commons and old rough pastures into tillage, lime acts very beneficially; but after frequent applications, upon lands in a constant course of tillage, I have, as well as some others, my doubts, whether we do not expend large sums to little or no profit. Of this opinion was Mr. BISHTON, in an instructive conversation I had with him on this and other branches of agriculture. I allow the farmers who expend large sums in the purchase of lime, to understand their interest very well, and to have more skill and observation than we generally attribute to them. They acknowledge the superiority of dung, but say, what can we do? we cannot all

be supplied with it, equal to our wants, and therefore we use lime, in which we think there is an inferior degree of manure. The covering of lime with soil taken from the roads or head-lands, and after they have lain in this state for some time, incorporating them together, is a practice I have recommended, that has been tried with success, and that is gaining ground. It has been long the practice in Devonshire*.”

“Dung and lime, or a compost of dung, lime, and soil, are used. Sometimes soot and malt-dust is sown on meadow or pasture land: two years ago, soap-ashes were much used, but now the price of them is advanced as high as 8s. per ton, at which price they will not answer for manure, but are sold to go to the glass-houses†.”

“The manure most in use, is lime, with which every part of this county is tolerably well supplied. It is principally spread upon arable land, and by that means the farmer can reserve the dung for the grass. Lime, when mixed with peat, will consume it to ashes; and was this practice to become common, an admirable manure for grass-lands, or young clover, would be procured‡.”

“There does not appear to be much difference in the culture of the sands and gravels of this county and of those of Norfolk, or any other light soils where the turnip course has been introduced. One general observation may be hazarded with the support of experience, that the same crops too frequently recur upon the same land. From this cause the land has been found to grow tired (as it is said), by too quick a repetition. For this evil, the variation of crops is one remedy, and it has been tried successfully. Another remedy is manuring, from which COLU-MELLA has derived his axiom, “*terram nec senescere,*

* EDWARD HARRIES, Esq.

† Mr. TENCH.

‡ Late Mr. LLOYD, of Aston.

nec fatigari, si stercoretur.” But simple and accustomed stercoration produces too partial a renovation of the soil to cure the defect. A third method seems more efficient, though less noticed, the variation of manures; for thus, not only new vigour is applied to the land, but also fresh compounds are formed, by combining the matter of the soil with a strange substance; and thus, in some degree, a different soil is formed, and a different aliment of vegetables. The soils which lie over mines of coal and iron-stone, have something peculiar in their nature. The general substratum is an ochrous clay, and much matter abounding with the vitriolic acid. As manure to such land, lime and calcareous substances appear to be naturally appropriated, as being capable of producing, in union, a nitrous compound, the source of fertility. But these soils, from the richness of their subterraneous treasures, have commonly the advantage of a large population in their vicinity, whence the occupier may obtain abundant means of enriching them. The lime-works of the Clee-hills and Oretton, give excellent lime; but it is impossible for this district to receive the profit it should derive from them, because of the scandalous badness of the roads*.”

Rotten dung, or composts with dung, soil, lime, &c. are often injudiciously applied, by being buried in the fallows, or turned in with the sward; by which means the manure is washing away from, or sinking below, the roots of the grain, before they can reach it, if they ever reach it. It appears better to put manures of this species on the fallows just before sowing, and then sow under furrow, *i. e.* sow the grain upon the manure, and turn both in together with the plough; or else ridge up the bouts, so that

* Mr. ROWLEY,

the wheels of a small cart will span them, which may be drawn by one horse walking upon the ridge of the bouts, and by this means, the manure may be put on and harrowed in with the grain, which should be sown directly; or, if the wheat is dibbled, the manure may be put on in this way after sowing, as a top-dressing, and lightly harrowed in, which would serve to cover the seeds the better; and this may be done either before or after sowing, where the soil is too strong to sow under furrow.

I doubt whether the custom of burning couch-grass (*Triticum repens*), called in this county scutch-grass, with fire, is so good a method of destroying it as by lime. When a field is cleaning from this noxious grass, the roots may be carried to a heap, without staying to shake the soil from them so completely as is necessary for burning; and if, in making the heap, clods of hot lime, of the depth of a few inches, are placed between every layer of about one foot thick, the heat of the lime will reduce them to ashes. If the smoke is so great as to make flame apprehended, soil should be cast upon the heap, to prevent this. The quantity of ashes produced by this method, is much greater than in the ordinary mode, the plant is as completely destroyed, and the lime so slacked and incorporated, appears to do much more good to the land, especially to ground that has been used to that manure. It is a good method to cut the weeds from the hedges, &c. and burn them in the same way. Turf is sometimes cut upon Clun forest, in May or June, and burned. The ashes are used as a manure for turnips, ten cart-loads to an acre.

SECT. IV.—WEEDING.

THE advantages from weeding ground seem not sufficiently attended to. Thistles are usually cut out of grain: the person doing it walks between the ridges, with two small iron hooks at the end of a stick of some length, and by that means cuts off the thistles, or other large weeds; and this is repeated, as the necessity of the case requires: but then the farmer who has been at this expense and trouble, will not go a step farther to cut down the weeds in the hedges of the same field even; therefore a succession of seed is at hand to blow over it. If weeds by ditches and hedges were cut down twice a year, they would be each time too young to have perfected any seed; and if mixed with lime, or even placed in a heap by themselves, and left to decay, they would furnish some manure, and the weeds of the country would be inconceivably lessened. There is an instrument of good construction used in this county, for pulling up docks. It is made of iron, ending in a blunt fork, and fastened to a piece of wood, somewhat longer than the handle of a spade. The fork penetrates within the ground two or three inches, and fastening on each side the dock root, raises it out of the ground by means of a bow of iron that projects behind the fork, and acts as a lever, when the handle is bent downwards. But this instrument is not used in the degree it ought to be. Many farmers do not weed their meadows or pasture-grounds at all: thus their hay-seeds are mixed with those of weeds, and their pastures are unnecessarily exhausted, and the place of good grasses detrimentally occupied. Again, in clover leys which they mean to break up, they do not seem aware how much their ground is fouled and
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impoverished, by suffering docks and thistles to perfect their seeds. I have not seen any thistle tongs used in this county; an instrument common in the north of England, made either of wood or of iron, and which, by pulling thistles out of the ground, appears to extirpate them more effectually than cutting them; and the length of handle to these tongs, permits the weeder to stand upright.

“*Weeding*—Farmers are now daily improving in this respect. They have lately discovered its utility, more particularly in the culture of turnips. Where the following method has been pursued, it has always been attended with success:—When a farmer has a crop of turnips, which he does not intend to clean by hoeing, let his landlord send a man to hoe a quarter, or even half an acre for him, as well as possible, but neither in the *best* nor *worst* place. The farmer should be present to see the process; the value of which will be demonstrated to him, when his crop is full grown, and he compares the hoed part of the field with the rest. The next year he should be allowed a man for two days, to instruct two of his own men, and to hoe between them; after which they will be able to do the business themselves, unless they are of perverse dispositions, and persons of that description should not be put to the work. In no instance is the utility of weeding more to be observed than in the growth of young quicksets, which, unless kept clean, will never make a hedge. Farmers are particularly inattentive to plants which produce winged seeds, and will suffer them to grow in the lanes, or wastes adjacent to their lands (which of course must receive a large proportion of the seed), rather than cut them; though attended only with slight trouble, and merely because, as they say, *it is not their business.*”

SECT. V.—WATERING.

“THERE are some meadows floated, by preserving levels from streams of water, but little of this improvement is done in a masterly manner; though floating has been long in practice by a few of the best farmers, and the use of the spirit-level is known*.”

At Holly-grove, near Drayton, on the N. E. borders of the county, and at Walcot, near Bishop's Castle, on the S. W. are some very complete water-meadows, and which can be flooded at pleasure; the river Tern, in the first instance, and a large artificial lake, supplied by running streams, in the second instance, lying above the level of the meadows. The principle is the same in both; that of conducting the feeders along a ridge-level, from which the water flows both ways. The meadows at Holly-grove were formed by the plough; those at Walcot by the spade, at an expense of, perhaps, 12l. per acre. The latter were not worth many shillings per acre, in their original state; and now they will afford two crops of hay, or, what is better, graze late in the spring (a great advantage in a country of sheep-walks), and still afford about two tons of hay per acre, and a valuable crop of headgrow, or aftermath. Hill-watering is equally advantageous: I have had many acres of good meadowland made upon a farm that had no level ground, by collecting the springs, and bringing them along feeders cut on a declivity, when they overflow the lower side. Before ground is watered, all the low and moist parts should be well drained with stone, and covered over; and with this precaution, I have known the rushy and mossy

* Original Report.

bottoms, and the dry banks, almost equally improved by watering. I have known it even answer where the upper soil was poor, and the substratum a rocky clay, or catbrain. Many farmers hesitate to water, where the stream is clear, or pure. One stream of water may be more enriching than another; but if there is a manure from water, owing to the fixed air that escapes during its decomposition, any water that can be brought over land in very thin layers, and that shall not flow too far, before it drops into a drain to carry it off again, must invigorate the soil.

“ Upon the river Tern, near Drayton, for some extent, the lands are regularly floated with a strong stream. They are grazed early in spring with cows and other stock (not sheep). If the grass, which is forced at that time upon the meadows, was to remain, the bottom would rot long before it was ready to cut. After the cattle are drawn off, the water is again turned on, and a plentiful crop of rather coarse hay is produced. The soil is generally of a black peaty nature. By means of the mill-dams or sluices across the river, a large body of water is brought in trenches, and distributed over the land in the same method as watering is practised in Wiltshire. Where a brook runs through a valley, the soil of which is shallow, and the sub-stratum clay, it becomes loaded after heavy showers, with particles of soil washed from the arable lands. As this water spreads over the valleys, it leaves behind it a sediment that acts as a manure. The water-courses, which only flow in the rainy and winter season, are often distributed by shallow floats over the meadow-lands, and sometimes mixed with the drainings of the fold-yard, which is a favourable circumstance. In that part of the county that partakes of hill and dale, the springs and rivulets are used for watering; and in
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the month of April force vegetation very much. Wherever the bottom is sand, or gravelly, no improvement equals the advantages derived from water, and its use is much increasing. When a moderate supply of water cannot be depended on in April, or the beginning of May, such lands should not be grazed after Christmas*."

* EDWARD HARRIES, Esq.

CHAP. XIII.

LIVE STOCK.

SECT. I.—CATTLE.

THE neat cattle of this county cannot be referred to any of the distinct breeds that writers upon live stock have enumerated, though, probably, they are much the same breed as that spread over Warwickshire and Staffordshire. The old Shropshire ox was remarkable for a large dewlap. There have been many cattle reared within the last 20 years, from the improved breeds of Lancashire, Cheshire, Leicestershire and Staffordshire, and that of Mr. FOWLER, of Oxfordshire. Upon the south confines of the county, the Herefordshire breed is now gaining ground; and some Devonshire cattle have been brought to Kinlet-hall. About Bishop's Castle is a good breed of cattle, the colour a dark red; they are more uniform in shape and colour than in any other district in the county: the oxen at four years old sold upon an average at 15l. a-piece unfed, previous to the late extraordinary prices. At Walcot, many Alderney cattle have been bred for the dairy, and numbers of the Galloway breed have been reared there. A male and two female zebus were sent by Lord CLIVE from Madagascar: the females have each had a calf; they are themselves considerably less than the smallest cows of the Kylvie breed, in either the Scotch Highlands or Islands, but their calves at six months old,

are nearly as large as their dams, and endure showers of rain, against which the old ones run to shelter. A year or two ago a bull at Botvyle, descended from Mr. PRINCEPS' stock, out of a Shropshire cow, and bred in this county, seemed to vie for superiority with that bull of which Mr. PRINCEPS sent a lineal representation to the Board of Agriculture some years ago. They measured respectively as follows:

	Staffordshire bull.			Shropshire bull.	
	ft.	in.		ft.	in.
From head to tail, -	7	8	-	7	8½
Thickness of the horn, -	0	4	-	0	0
Do. at the root, in circumference, 0	0		-	0	8½
Do. in diameter, not -	0	0	-	0	3
Girth of the neck, close to the head, 4	3		-	3	6
Do. of body, close to the fore legs, 7	9		-	6	11½
Do. of the belly, -	8	9	-	7	4
Height at the shoulder, 5	1¼		-	4	8
Do. putting on of the tail, 5	1¼		-	4	8
Length from hip to tail, 2	2		-	2	5
From hip to hip, -	0	0	-	2	0½

The last measurement is not given in the print of the Staffordshire bull, nor the age or condition specified. The Shropshire bull was six years old, and lean. At Purslow-hall is the bull that was shewn at Shifnal, December 29, 1800, and which was then adjudged to have won the wager of 100 guineas upon which he was brought there, viz. that he was a better bull than any of the Leicestershire breed. He appears to me to combine many of the favourite points of Mr. BAKEWELL's breed, with those in which the old Herefordshire breed were thought to excell. Being fat, his dimensions cannot well be compared with those of a lean beast; but I add those of a bull now eight years old, the property of Mr. PERKINS, of Wilderley,

ley, about eight miles south of Shrewsbury, and which was bred in this county, out of a cow purchased from Mr. HILDITCH, of Cheshire, viz. from head to tail 8 feet $1\frac{1}{2}$ inch; the horn, close to the head, in circumference $9\frac{1}{2}$ inches; girth of the neck, close to the head, 3 feet 10 inches; girth of the body, close to the fore-legs, 8 feet; ditto, of the belly, 8 feet 10 inches; height at the shoulder and putting on of the tail, 5 feet 4 inches; length from hip to tail, 2 feet $2\frac{1}{2}$ inches; across the hips, 2 feet 3 inches.

What are called the Leicestershire breeds, are undoubtedly very quick feeders: they are always beef; but they appear less adapted to work than the Herefordshire and Devonshire breeds. The meat will be often too fat, and there will not be a proportion of tallow on the inside. This applies equally to the sheep and hogs of the same breeders. When the object is to lessen bone and muscular strength, a quiet, indolent, quick-feeding animal is produced; but an active strong animal is wanted, if the oxen are to work. These different qualities appear to me to reconcile the seemingly different principles of breeding *in and in* (that is, from the same stock) and of crossing stock. The former may diminish bone and muscular strength, and the latter increase it, and thus each principle may be equally good, if applied according to the object aimed at. It seems desirable, however, to produce in the Leicestershire breeds, an aptness to increase in flesh as well as in fatness. Waste of any kind is wrong; but when provender is used in making an animal too fat to be eaten, the fault is double. It is consuming food of one species to spoil food of another species.

I had long wished to see the method of killing cattle, by dividing the spinal marrow, come into common use, as it seemed probable the suffering of the animal was gene-

rally prevented thereby. The method was introduced at Mr. MELLISH's slaughtering-houses, by the laudable perseverance of Lord SOMERVILLE, and other members of the Board of Agriculture, and Mr. MELLISH found the flesh of the beasts so killed equally good, if not better, than the flesh of those slaughtered in the usual way. And as the operation is performed quietly, and without alarm to the animal, all bruises are avoided, and such are not very uncommon in forcing them into a proper position to receive the stroke when they are to be knocked down. A butcher at Wisbech practised this mode several years ago, from the representations made to him by Captain CLARKSON, of the Navy, who had seen them so slaughtered for the use of our fleet when at Jamaica. After this person's death Mr. SMITH, a butcher of the same place, adopted the same method, and in the year 1796 I procured, by favour of Mr. CLARKSON (whose name accords so well with any question of humanity) the following account, which he had from Mr. SMITH—
“ Mr. SMITH informed me, that he kills all his bullocks by striking them in the spinal marrow. If a line were drawn from ear-root to ear-root (at about an inch and half distance from the horns) and the centre of this line were found, this centre would be the place where the knife should enter. The knife is not in the form of a dagger, nor is it thrust in with any force. It is rather larger than a common penknife, but the blade is permanently fixed to the handle. The handle is taken into the hand, and the forefinger goes down it towards the point, merely to direct it. The person using the knife takes hold of one ear of the beast with his left hand, and with the right he strikes it with the knife. In the same instant the bullock drops, and is out of sensation of any pain. He informs me, that it is not once in a thousand times that any person misses the
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the right place ; perhaps an apprentice may at the beginning, but the rule is so certain, that it may be said hardly ever to fail, and if it should fail, the knife is at any rate so near the proper place, that by the least alteration of the position (without even taking it out) it finds its way. In this case there would hardly be the pain of two seconds. I was obliged to leave Wisbech before the killing day, or I would have seen this method practised. I talked to SMITH's apprentice, who assured me that he had no difficulty in finding the proper spot, and that the beast drops instantly. Though SMITH kills in this manner, no other butcher of Wisbech follows the example. He says, however, that the practice obtains pretty universally on the Lincolnshire bank of the Humber, as at Barton and several other places. Calves, sheep, pigs, &c. are killed by SMITH in the same manner. I saw three sheep that had been skinned, and were hanging up in his shop, which had been killed by his apprentice in this way. He shewed me the small hole on the back of the head, or neck, which the knife had made."

Plausible, however, as these experiments are, I believe now, that they proceeded upon a mistaken principle, or rather, that the operation did not accord with the principle, so far as tenderness towards the animal is concerned: for though a beast is managed completely by this mode, it is not so certain that his sense of feeling is destroyed. The contrary indeed seems proved, by the meritorious pains taken by Mr. DU GARD, of the Shrewsbury Infirmary, who has shewn in the following communication, that though the spinal marrow was divided, the nerves that supplied the organs of respiration and most of the senses, were uninjured. Mr. DU GARD's experiments were communicated to Mr. EVERARD HOME, of London, and by him,

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through Sir JOSEPH BANKS, to the Board. Mr. HOME afterwards sent Lord CARRINGTON the valuable paper that follows Mr. DU GARD's, in which he has suggested a mode of performing the operation, which would answer completely, could we be sure of having operators sufficiently skilful. We may the less regret the difficulty in getting new modes established, when we thus see the superiority of an old custom under very improbable circumstances; and if well-meant reformers wanted any additional motives to care and circumspection, a very forcible one is furnished in the instance of the time and trouble taken to introduce this operation, and which, as it has been hitherto practised, is the very reverse of what was intended.

OBSERVATIONS AND EXPERIMENTS ON PITHING
CATTLE. BY THOMAS DU GARD.

“ The subject of slaughtering cattle by puncturing the medulla spinalis, with a view of superseding the method generally practised in England, has lately engaged the attention of the Agricultural Board, and been strongly recommended by them.

“ It is, I believe, universal in Portugal and other parts of the Continent, as well as in some of our West India islands, but is only of late introduction into this country.

“ Pain and action are so generally joined, that we measure the degree of pain by the loudness of the cries, and violence of the consequent exertion; and therefore conclude, on seeing two animals killed, that the one which makes scarcely a struggle, though it may continue to breathe, suffers less than that which is more violently convulsed, and struggles till life is exhausted.

“ It appears, however, that there may be acute pain
without

without exertion, perhaps as certainly as there is action without pain; even distortions that at the first glance would seem to proceed from pain, are not always really accompanied with sensation.

“ To constitute pain, there must be a communication between the injured organ and the brain.

“ The heart of a viper pulsates after being taken out of the body; and that pulsation is increased if it is goaded with a pin. Limbs suddenly separated from the human body sometimes start and twitch for a few moments. The viper cannot be said to *feel* pain on its heart being pricked with a pin: nor would any man who saw his own finger contract from electricity, or heat, after it was cut off, fancy it suffered pain. The pain in both instances is in the part only from whence the separation took place.

“ Perception, and the power of exertion, are derived from the brain in the skull, and back-bone. That part which lies in the skull seems principally to supply our senses and appetites with nervous energy; and that part which lies in the spine, and is called marrow, is more particularly appropriated to the action of the large locomotive muscles.

“ An injury to the skull, not sufficient immediately to take away life, often leaves the patient with the power of moving his limbs, though without any feeling or perception, lying in a profound apoplectic sleep.

“ On the contrary, an injury to the spine leaves the power of perception perfect, though the limbs are immoveable; but as life depends more on the functions of the brain, and of the lungs, than on the spinal marrow and its dependent loco-motive muscles, the animal feels and lives longer on its sustaining a given injury in the spinal
R 4 marrow,

marrow, than on a fracture or concussion of the head*.

“J. B. fell in the Summer of 1801 from a load of hay; he was bled, and brought to the Infirmary at Shrewsbury, which being my residence, gave me hourly opportunities of examining him: *he complained of great pain in the upper and back part of his neck*, but of none lower down: he had not the power of using the least motion with any of his limbs. His arms, body, and legs, were all quite insensible to any pain, or feeling from pricking, or pinching, and therefore all sensation below the injured part of the spine was destroyed. In this state he languished a week, being apparently in full possession of the feelings and faculties of his mind, and of his senses of hearing, sight, smell, and taste. He took food for two or three days, though the power of retaining, or protruding his evacuations was lost. On examining the neck after death, the second cervical vertebra was found fractured,

* That perception may remain in the head, and respiration be continued after the division of the medulla spinalis, will be evident to any one who consults the anatomy of those parts.

In the human subject, the par vagum, or eighth pair of nerves, arises from the corpora olivaria of the medulla oblongata, and passes out of the cranium through the foramina lacera into the neck, thorax, and abdomen, sending off branches to the tongue, larynx, pharynx, lungs, and abdominal viscera.

CUVIER, in his *Leçons d'Anatomie comparée*, after stating the course of this nerve in the human subject, observes also,

“Dans les mammifères.

“Cette distribution du nerf vague étoit à peu près la même dans quatre ou cinq espèces de mammifères sur lesquels nous avons fait des recherches à cet égard. Les *veau* seul nous a offert une particularité que nous avons indiquée à l'article du nerf facial; mais les anastomoses avec le grand sympathique, les nerf récurrents, les plexus cardiaque et pulmonaire ne nous ont présente de différence que dans le nombre des filets, ce que peut dépendre de l'adresse du prosecteur, des espèces que nous avons desséquées sont le *chien*, le *raton*, le *cochon*, le *porc-épic*.”

I have examined the head and neck of a sheep killed by the puncture, and found the par vagum uninjured.

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“ On reflecting on this case it occurred to me, that a *dumb* animal, if reduced to the state of this poor man, would not have the power of expressing the pain it endured, for J. B. had great pain *above* the injured part, though all power of moving, as well as feeling, was destroyed below; and in the brute creation, we judge of pain by the muscular efforts of the animal. I therefore, by means of a dagger, punctured the spinal marrow of a cow according to the new method of slaughtering, and having divided it as much as possible after she fell, reduced her to the same state as the poor man whose case I have related. The animal breathed with freedom, and perception in the head continued, as was evinced by the eyelids closing on the approach of my hand, till the butcher struck a blow near the horns, when her breathing ceased, and the eye became fixed with immediate death.

“ In all the experiments I have hitherto tried, the animal has suddenly dropped, and has been slightly convulsed, but has not died immediately. In sheep, after puncturing the medulla spinalis in the new way, I have seen their eyes close and open, on the approach and withdrawing of my hand, for twenty times successively, and the pupil as much contracted as in health, till I was anxious to terminate their misery by having the blood vessels of the throat divided. From the loss of blood their eyes have then soon become dilated and insensible.

“ In the old method of slaughtering, a concussion of the brain takes place, and therefore the *power of feeling* is destroyed. The animal drops, and although convulsions take place generally longer and more violent, than when the spinal marrow is divided, yet there is, I think, reason to believe that the animal suffers less pain.

“ The *immediate* consequence of the blow is the dilatation

tation of the pupil of the eye, without any expression of consciousness or fear on the approach of the hand.

“ In this state of insensibility, which in man would be called apoplexy, or extreme stupor, the blood is always drawn off by the butcher cutting the throat, and the animal dies without the least sign of feeling or uneasy faintness.

“ In severe epilepsy the brain suffers a temporary suspension of power, in many respects very similar to the concussion of the brain from a blow, only that the convulsions and expressions of pain seem greater: yet the patients uniformly agree, that they do not recollect any pain; the reason is obvious, the disease is a suspension of the power of feeling.

“ From all these circumstances, I conclude that the new method of slaughtering cattle is more painful than the old. The puncture of the medulla spinalis does not destroy feeling, though it renders the body quiescent, and in this state the animal both endures pain at the punctured part, and suffers, as it were, a second death, from the pain and faintness from loss of blood in cutting the throat, which is practised in both methods.”

COPY OF A LETTER FROM EVERARD HOME, ESQ. TO
LORD CARRINGTON.

“ MY LORD,

“ I had the honour of presenting to your Lordship, through Sir JOSEPH BANKS, some experiments and observations made by a surgeon at Shrewsbury, to shew that the mode adopted in this country, of killing animals by wounding the spinal marrow, is less humane than the more common one of knocking them down.

“ I have, at your Lordship's request, repeated these experiments,

periments, and find the results agree with those of the author of the paper in every respect; but the want of success, appears to arise entirely from the operation having been performed in a very imperfect manner.

“ On Thursday the 15th of July, 1802, the following experiment was made at Mr. GIBLET's, in Bond-street: A very fine ox was pithed, as it is termed, by BENJAMIN BARTHOLOMEW, who has performed this operation more than twenty different times, and is considered to be very expert in the mode of doing it. I begged that he would take some pains, so as to do it in the most effectual manner.

“ The instrument he used, was in the shape of a brick-layer's trowel, made sharp at the point, and having a guard at the shoulder, to prevent the blade from being buried in the neck.

“ He plunged it, with great dexterity, into the canal containing the spinal marrow, and the animal instantly dropped, but the breathing continued, the motions of the eye and eye-lids were perfect, and the whole face lost no part of its animation.

“ This being ascertained by observation for ten minutes, and the animal not being sufficiently quiet to admit of the throat being cut, it was knocked on the head, and every appearance of animation in the countenance immediately ceased, and the breathing stopt.

“ The spinal marrow was afterwards examined; it was found completely divided, but too low in the neck, the wound having been made one inch and a half below the origin of the nerves that supply the diaphragm.

“ That a division of this part of the spinal marrow does not deprive an animal of life, has been known to anatomists for many years, and the causes of its failure cannot be better explained, than by extracting an account of some
expe-

experiments made by Mr. CRUIKSHANK, in the year 1776, at which I was present, and gave my assistance. They are published in the 85th volume of the Philosophical Transactions.

“ *Experiment VI. April 19, 1776.*—I divided the spinal marrow of a dog, between the last vertebra of the neck and first of the back. The muscles of the trunk of the body, but particularly those of the hind legs, appeared instantly relaxed; the legs continued supple, like those of an animal killed by electricity. The heart, on performing the operation, ceased for a stroke or two, then went on slow and full, and in about a quarter of an hour after, the pulse was 160 in a minute. Respiration was performed by means of the diaphragm only, which acted very strongly for some hours. The operation was performed about a quarter of an hour before twelve at noon; about four in the afternoon, the pulse was ninety only in a minute, and the heat of the body exceedingly abated, the diaphragm acting strongly, but irregularly. About seven in the evening the pulse was not above twenty in a minute, the diaphragm acting strongly, but in repeated jerks. Between twelve at night and one in the morning the dog was still alive: respiration was very slow, but the diaphragm still acted with considerable force. Early in the morning he was found dead. This operation I performed from the suggestion of Mr. HUNTER. He had observed in the human subject, that when the neck was broke at the lower part (in which cases the spinal marrow is torn through), the patient lived for some days, breathing by the diaphragm. This experiment shewed that dividing the spinal marrow at this place, on the neck, if below the origin of the phrenic nerves, would not, for many hours after, destroy the animal; it was preparatory to the following experiment.

“ *Expe-*

*“Experiment VII. April 26.—*I divided the par vagum, and intercostal nerves, on both sides, in a dog. Soon after, I performed on the same animal the operation of the last experiment, and the same symptoms took place. His respirations were five in a minute, and more regular than in Experiment III.; the pulse beat 80 in a minute. Five minutes after, I found the pulse 120 in a minute, respiration unaltered; at the end of ten minutes, the pulse had again sunk to 80 in a minute, respiration as before; at the end of fifteen minutes, the pulse was again 120, respiration not altered. The operation was performed about two in the afternoon, at Mr. HUNTER’s in Jermyn-street. At three quarters of an hour after five, the respirations were increased to fifteen in a minute: the pulse beating 80 in the same time, and very regularly; the breathing seemed so free, that he had the appearance of a dog asleep. At a quarter before eight, the pulse beat 80, respirations being ten in a minute. At three quarters of an hour after ten, respiration was eight in a minute, the pulse beating 60. The animal heat was exceedingly abated: I applied heat to the chest, he breathed stronger, and raised his head a little, as if awaking from sleep. At half after twelve Mr. HUNTER saw him; the breathing was strong, and twelve in a minute, the heart beating forty-eight in the same time, slow, but not feeble. He shut his eyelids when they were touched; shut his mouth on its being opened; he raised his head a little, but as he had not the use of the muscles which fix the chest, he did it with a jerk. Mr. HUNTER saw him again between four and five o’clock in the morning; his respirations were then five in a minute, the heart beating exceeding slow and weak. We suppose he died about six in the morning, having survived the operation sixteen hours. This experiment I made from the suggestion of Mr. HUNTER, with

with a view to obviate the objections raised against the reasoning drawn from the three first experiments. It was urged, that though by these experiments I had deprived the thoracic and abdominal viscera of their ordinary connexion with the brain, yet as the intercostals communicated with all the spinal nerves, some influence might be derived from the brain in this way. This experiment removed also the spinal nerves, and consequently this objection.

“ As I found by the two last experiments, that dividing the spinal marrow in the lower part of the neck, did not immediately kill, although instant death was universally known to be the consequence of dividing it in the upper part of the neck, I expressed my surprize to Mr. HUNTER, that the spinal marrow should, according to modern theory, be so irritable in the one place, and so much less so in the other.

“ He told me, that from the time he first observed that men who had the spinal marrow destroyed in the lower part of the neck, lived some days after it, he had established an opinion, that animals who had the spinal marrow wounded in the upper part of the neck, did not die from the mere wound, but that in dividing it so high, we destroyed all the nerves of the muscles of respiration, and reduced the animal to the state of one hanged: whereas, in dividing it lower, we still left the phrenic nerves, and allowed the animal to breathe by his diaphragm. If this opinion be well-founded, though dividing the spinal marrow in the lower part of the neck does not kill instantly, whilst the phrenic nerves are untouched; yet if I divide the phrenic nerves first, and then divide the spinal marrow in the lower part of the neck, the consequence, I said, will be the same as if I had divided it in the upper part.

“ *Experiment VIII.*—By detaching the scapulæ of a
dog

dog from the spine and partly from the ribs, I got at the axillary plexus of nerves on both sides from behind. I separated the arteries and veins from the nerves, and passed a ligature under the nerves, close to the spine. I thought I could discern the phrenic nerves, and instantly divided two considerable nerves going off from each plexus. The action of the diaphragm seemed to cease, and the abdominal muscles became fixed, as if they had been arrested in expiration, the belly appearing contracted. His respirations were now about twenty-five in a minute, the pulse beating a hundred and twenty. As I was not willing to trust the experiment to the possibility of having divided only one of the phrenics (which I afterwards found was really the case), and some different nerve instead of the other, after carefully attending to the present symptoms, I divided all the nerves of the axillary, of each side. The ribs were now more elevated in respiration than before; respirations were increased to forty in a minute, the pulse still beating a hundred and twenty in the same time. Finding that respiration went on very easily without the diaphragm, in about a quarter of an hour after dividing the axillary plexus of each side, I divided the spinal marrow, as in Experiment VI. The whole animal took the alarm; all the flexor muscles of the body seemed to contract, and instantly to relax again; he died as suddenly as if the spinal marrow had been divided in the upper part of the neck.

“ Having explained the causes of failure in the present mode of pithing animals, it becomes necessary to state, that when the operation is properly performed, its success is complete. Of this I will mention the following instances:

“ A small horse was killed in this manner, that a cast might be made of its muscles in their natural state of action. The animal was allowed to stand upon a pedestal, and the operation

operation was performed by Mr. HUNTER, with a large awl: the breathing ceased instantaneously, and the animal was so completely dead as to be supported by the assistants, without making the slightest struggle, and was fixed in the position in which he stood, without ever coming to the ground*.

“A dog was killed so instantaneously in the same way, by Mr. HUNTER, that Mr. CLIFT, the conservator of the Hunterian Museum, who held the legs, and did not see the awl introduced, was waiting till the animal should struggle, and had no knowledge of any thing having been done, till he was told to let go, and was surprized to find that the animal was completely dead.

“In these operations, the instrument was small, and directed by the skill of an anatomist upwards into the cavity of the skull, so as to divide the medullary substance above the origin of the nerves which supply the diaphragm.

“By adopting this method of performing the operation of pithing cattle, it will be attended with the same success.”

“Neat cattle, on the north-east side the river Severn, are an inferior sort of the Lancashire long horn, in general for the dairies; the south-eastern part of the district being chiefly light turnip land, the clover and pasture are mostly appropriated to the dairies, which are small; the cheese is rather ordinary, as much butter is gathered, which is taken off at a good price in the manufacturing towns. On the north-west side of this district, and bordering upon Cheshire, the dairies are much larger, and chiefly for cheese. Most farmers rear a few calves yearly, for the regular supply of their dairies, and the breed is by some made better, by the purchase of bulls from Leicestershire and Lancashire.

* The cast of this horse has a place in the Hunterian Museum.

“ On the S. W. side the river Severn, small dairies are kept both for butter and cheese ; many calves are reared,—the bull calves are cut, and many heifers spayed: from three years old to six, they are worked easily by drawing double, eight in a team to a single-furrow plough. The capital farmers do not work them more than six hours at a time, and in seed-time, when more expedition is wanted, they change them, by working one team in the morning and another in the afternoon: by this method, as they say, they get their team labour done at a small expense, for their oxen being sold lean, at from 25l. to 35l. per pair, they reckon their improvement to pay them near 2l. a year each. This is the sort of oxen that the Northamptonshire and Leicestershire graziers buy in the Autumn at Shrewsbury, Bridgnorth, Bishop’s Castle, and Much-Wenlock fairs.

“ This county is not famous for dairying ; but the best dairy-wives make about eight pounds of a cow ; but those make much more, who are near enough to a town to sell their milk, and those who keep new milched cows in Winter, and sell their skim’d milk by the quart, and their butter, from one shilling to fourteen-pence per pound. The price of that article is the best tacit proclamation of the luxury and prosperity of this kingdom ; for I remember within the compass of 45 years, families in my neighbourhood supplied with butter, the year through, at four-pence per pound*.”

“ When the farmers in this district intend to rear calves, they wish the cows to bring them in February or before. When they propose to fatten them for the butchers, they do not desire them before the latter end of March. Cows go dry at different times, some three months before they

* Original Report.

calve, and some not three weeks. Where land is below mediocrity, it is reckoned to be good management to rear as many calves as may be necessary to keep up the stock of cows; the manner of feeding them is various. Some mix oat-meal, some wheat-flour, some oil-cake, with milk. Some give them at an early period hay and oats. Some turn them out to grass, two to a cow. The calves which are not intended to be reared, are suckled till they are sold to the butchers. They are sold to advantage, if they are kept till they are six weeks old*."

"Perhaps the most advisable method to improve the breed of neat cattle, would be for each farmer to select some of the best of his stock of cows, and add to them a few still better (prudently chosen to suit his farm) and a bull from 15l. to 20l. or 25l. price, from Leicestershire, Derbyshire, Lancashire, or the South and East parts of Staffordshire, where the sorts of cattle are much better than in Shropshire. He might also purchase a few heifers, at one, two, or three years old, as a speedier means of bringing about his stock. This might be done at a small expense, compared with the advantages that would be derived from such a scheme, when it is considered that little or no more expense in keep would be required to mature a beast that would sell for 10l. 11l. or 12l. than would be requisite for one that would not be worth more than 7l. or 8l. at a similar age. A change of bull, and an addition of a few cows, may be made at the end of every three years, the farmer selling off such of his cows and rearing stock as would be the least desirable to keep, either on account of their form or milking. By this method the keeper of a large stock would soon be able to supply small farmers,

* Rev. Mr. ROWLEY.

who might not have it in their power to adopt such a plan, at prices very advantageous to himself. It might be both inconvenient and imprudent to make a sudden total change in a stock *."

"*Cows* in Shropshire are every where housed and tied up during the Winter †."

SECT. II.—SHEEP.

"THE breeding flocks are few and small, where there are no commons, but are various in their sorts, as the fancy of the farmer leads him; for in this county there are sheep kept of most of the sorts in England, from the Welsh of 6 lbs. per quarter to the Leicestershire of 30 lbs. per quarter: those farmers who have commons generally keep of a size from 11 lbs. to 14 lbs. per quarter; shear about 2 lbs. of wool each, worth about 1s. 6d. per lb. though there has been of late such a fluctuation in the price of wool, that it is now difficult to say what any sort is worth. Upon some commons the aged wethers do not require much assistance in the Winter, but the ewes and lambs, with the yearling sheep, are either wintered from home or kept in their own farms. This sort, which is kept to stock commons, is generally sold off, or fed upon their own turnips, at from four to five years old. There is scarcely an instance of folding sheep ‡."

"There are considerable flocks of sheep kept in some parts of Shropshire, particularly in the S. W. part, but they are, in general, of a sort that may be improved to

* *MR. BOWMAN.*

† *MR. PRICE.*

‡ *Original Report, pp. 10, 37, &c.*

great advantage, in a manner similar to that I before mentioned for the improvement of neat cattle, having regard to the climate, and to the herbage on which the sheep are fed*.”

“ Having no commons, we have but small flocks of sheep kept in this part. The sort I find to answer best are the Dorsetshire †.”

“ The old Shropshire sheep are horned, and have black or mottled faces and legs. They are about as large as the South-down sheep; but the neck rather longer, and the carcass, perhaps, not quite so compact. They are extremely hardy, and have never any dry food given them in the Winter, except in great snows which last for a considerable time. They are not attended by a shepherd, nor folded; nor do they generally *drink*. If any sheep is seen to drink, the farmer looks upon it as a sign that such sheep is rotten or tainted. The Shropshire sheep crossed with the Dorsetshire, are said to raise excellent stock, especially for land of a pretty good quality. The system of sheep husbandry in Shropshire is defective ‡.”

There is a breed of sheep on the Longmynd with horns and black faces, that seems an indigenous sort: they are nimble, hardy, and weigh near 10lbs. a quarter when fatted. Their fleeces, upon an average, may weigh $2\frac{1}{2}$ lbs. of which half a pound will be the breechen or coarse wool, and is sold distinct from the rest. Upon the hills nearer Wales, the flocks are without horns and with white faces, rather shorter legs, heavier but coarser fleeces than the Longmynd sheep, and of about the same weight per quarter. The farmers, in different districts, have tried at one time or another almost all the improved breeds; and at Walcot-

* Mr. BOWMAN;

† Mr. FLAVELL.

‡ Mr. PRICE.

considerable flocks of various kinds have been kept: Lord CLIVE has imported Spanish rams, on the one hand, and gone as far North as the Cheviot-hills for flocks, on the other; and that no experiment may be left untried, he cloathed some sheep, some years ago, in the manner recommended for fining the wool, but did not approve of the method. The "*pellitis ovibus*," mentioned by HORACE, Ode vi. b. 2. are understood by his commentators to mean sheep covered with skins, to preserve their fleeces from the weather. VARRO seems to mention the custom distinctly: whether PLINY bears testimony to it, is perhaps less clear.

Farmers complain of a want of sale for the Leicestershire sorts, as the meat is too large and fat for private families. They are generally bought for the Liverpool and Manchester markets. In manufacturing towns this sort may answer well, because where dinners are cooked by baking, a joint of this mutton may be cut into small pieces, and one of them put into a dish of potatoes through the week, and sent to the oven, when the quantity of fat will be an advantage, as it will make a large dish of potatoes palatable without other sauce. The farmers in the hill country seem to think the greatest advantage they derive from the access of foreign stock, is from the cross of the South-down with the Longmynd sheep: the produce they state to be as hardy, and to bite as close as the Longmynd sheep; whilst the wool is improved, and the weight of the carcass increased. I have observed, that the lambs of horned sheep, when newly shorn, are apt to make sore spots upon their skin by rubbing the flies off with their horns. This seems an objection to the horned breeds; independent of which I should prefer them, as I think their horns ornamental. The expense of procuring Winter meat for the hill flocks, takes off much from the profit;

and many are lost in hard Winters, for want of sufficient provision, if left upon the hills. The commons, fit only for sheep, would be rendered more valuable if they were divided according to the property, and enclosed; because they might then be broken up and laid down with better grasses, or improved by liming, where the breaking up was impracticable or too arduous. Hot lime upon green sward, is almost the only manure used in the district of Craven, in Yorkshire, which is distinctly a grazing country.

SECT. III.—HORSES AND THEIR USE IN HUSBANDRY COMPARED WITH OXEN.

“THERE is no particular breed, indeed very few foals are bred in this county; the supply is chiefly from Derbyshire and Leicestershire, by which means there are many valuable teams; and those farmers who can afford to purchase, find it their interest to have such, occasioned by the restraint laid by the turnpike laws from not drawing more than four horses*.”

“In my neighbourhood a considerable number of foals are bred. I think sufficient to keep up the stock of the district†.”

“Many farmers in this neighbourhood have stallions of the cart breed, and almost every one wishes to keep up his stock in this manner, and for this purpose breeding mares constitute a part of every team. Many useful horses of this kind are brought to market. Likewise some saddle-horses are reared here‡.”

* Original Report.

† EDWARD HARRIES, Esq.

‡ Rev. Mr. ROWLEY.

“There

“There are many small, hardy, compact and very useful working horses, bred in Shropshire*.”

The observation from the original report is most applicable, I presume, to the eastern borders of the county, for the farmers in general breed a foal or two every year, some for the cart, but more for the road: several inferior hunters are also reared, and some of a better sort. There was at Walcot, a few years ago, two or three stallions of Arabian blood, a cart-horse of the Dishley breed, a Scotch gallop-way, and a Welsh poney horse, all which were for the improvement of the breed of that district. A mare has been lately imported there, and two horses from the east. There is also a large Spanish ass at Walcot, and several mules have been reared there. Upon Clun-forest many small horses are bred and reared, and some upon the Long-mynd; but the breeds are not so valuable as they were formerly. The waggon-horses belonging to the more considerable farmers, are, in general, strong black horses, and I am sorry to say that they are usually docked. In many counties, Oxfordshire in particular, the tails of the waggon-horses remain in their natural state, which must be a comfort and advantage to animals exposed so much to flies, as horses of this kind are.

The waggon-horses at Pitchford-hall were fed, several years ago, with potatoes. They were boiled in a cullender that fitted the furnace, which cullender could be drawn up by a pulley, so that the same water served to boil several cullenders full of potatoes. The horses were fed with a quarter of a peck of these potatoes (they were a mealy sort) at the times they used to be fed with oats. They had no oats; they ate hay as usual, and did their work as well

* Mr. PRICE.

as usual. I do not understand that there was much saving in this food, when the expense of fire, and trouble was estimated; at least at the price that oats were some years since.

“The breed of horses is not sufficiently attended to, farmers being apt to send their mares to the cheapest stallions, without any other consideration whatever, and consequently very few good stallions are brought into the country: were it considered that a bad horse eats as much as a good one, the advantage of being more particular would be very obvious. As the canals will reduce the carriage of heavy weights upon the roads, lighter horses, with more blood, will be found of greater use than the heavy Leicestershire sort*.”

“In the strong lands, four or five horses are used to a plough, or six or eight oxen; the oxen are preferred for ploughing in the strong lands, but horses for the road business; that being the case, horses are best adapted for small farms, as oxen are for ploughing upon large ones†.”

“Horses in general are made use of, though some of the largest farmers get much of their ploughing done by oxen||.”

The ox teams of this county used to consist of ten oxen yoked: now those who use them generally plough with five oxen single in gearing, or with four oxen and a horse to lead them. A few persons have used them in waggons. I knew three oxen that with one horse did all the work of a small farm, and where, from the rank of the farmer, there was a considerable carriage of coals from pits near 20 miles distance: one ox shafted the waggon, and I believe this team, either in ploughing, or upon the road, was as

* Late Mr. LLOYD, of Aston.

† Original Report.

|| Mr. TENCH.

able as any horse team in the neighbourhood. The difficulties of shoeing makes this use of oxen less easy than heretofore, for few blacksmiths now understand it, so that in addition to the inconvenience of casting them to be shod, if a shoe is lost upon the road, an ox may be lamed before the shoe can be replaced. There was a model of an apparatus produced at the Board of Agriculture, by means of which oxen could be shod standing. It was proposed to drive the ox into a crib, like those used for the barbarous custom of setting their horns, and when the beast is thus confined, the foot wanting to be shod is to be placed upon a small block of wood, fitted to receive the lower part of the leg when bent at the lowest joint, two of which blocks must be fastened to the ground within the crib, so as to be near the fore and hind legs of the beast. I was in hopes that the useless and cruel custom of setting the horns of oxen had ceased with the use of ox teams, so that something might be gained to humanity, if much was lost to profit: but I am sorry to learn that this absurdity is not so entirely exploded as I had thought it was. The unpleasant custom of nicking horses tails, though it has neither a good nor an adequate motive, has still an obvious one; that of altering the appearance of an animal that is as often used for purposes of show and fancy, as for those of real business; and which is meant to be employed in one or other of those ways, so long as his strength lasts. If it were customary to set the horns of bulls and cows, a motive may also be assigned, for as goodness of breed has been looked upon as connected with this or that shaped horn, it may enhance the price of animals designed to propagate their species. But the horn of an ox fatted for slaughter, can never enhance its price; and for what then does its

un-

unthinking owner put himself to some trouble and expense, and his beast to exquisite pain?

I wish farmers would calculate more nearly than they appear to do, the advantages of ox teams above horses. They consume provender of less value, which would be a benefit to the individual as well as the community. The money laid out in a horse is a capital that is generally sunk; that laid out in an ox is as generally an improving capital: and in proportion as ox teams are used, they do certainly diminish animal suffering, for no man will work his ox team so hard, or feed it so inadequately, as horse teams are sometimes worked and supported.

SECT. IV.—HOGS.

“PERHAPS no county of its extent grows so many, or rears or fats so many hogs*.”

The original hog of this county was a high-backed, large-eared animal. This has been crossed by various breeds, and is rarely to be met with unmixed. Several Berkshire and Leicestershire boars have been introduced, and the Chinese breed has declined. I believe the small-boned improved Leicestershire breed has the disadvantage common to the other animals of that sort, viz. a want of fat on the inside, so that the quickness with which that breed appears to get fat, arises from the fat being more mixed with the flesh, or more upon the outside, than in other breeds, not that a greater degree of fat is added to the animal in a given time. But it should be considered, that the inside fat is frequently worth more than the meat of a

* EDWARD HARRIES, Esq.

beast ;

beast; though it is difficult to reconcile the markets in this respect, for when meat is at an average of 5d. per lb. perhaps tallow shall be at 6d. per lb. and when meat rises in price, the tallow shall decline.

“Pork and bacon are much used among the poorer people, when they can procure them; therefore the sort which is to be fed with the least trouble is to be preferred. A mixture of the Shropshire and Chinese has in this respect been found to answer for bacon, and a cross of the wild breed for pork. Pigs are very mischievous if suffered to ramble about; they should have a place as large as convenient to range in, but it should be well fenced, in which case much advantage might be made of the dung, and all the refuse of the garden, &c. might be taken to this enclosure for them. If pigs are turned out to graze, they should have a person to attend them, and to put them up when he brings them from the field. The mixed breeds fatten on considerably less food than the large Shropshire hogs, and consequently are profitable*.”

A greater proportion of labourers fed a pig formerly than at present; though those who are industrious and rear plenty of potatoes, contrive still to kill a bacon pig in Winter. One reason why labourers have not a pig so frequently as heretofore, may arise from their buying flour or bread, instead of wheat. Farmers who refuse to sell wheat in small quantities, act very improperly, for the labourer who can buy wheat, gets better bread than he can otherwise procure, and he has the bran towards feeding a pig.

A great deal of provision is anticipated by killing sucking pigs, and carrying them alive to market is very cruel.

* The late Mr. LLOYD, of Aston.

The stroke of death when instantly given, is matter of little pain, where there is no apprehension ; but the modes of bringing smaller animals alive to market must create much suffering ; and *it is an error*, that small pigs cannot be well dressed unless they are delivered to the cook the moment they are killed. They are quite as good to eat, though killed very many hours, or brought dead many miles, before the operation of preparing them for the table is begun.

SECT. V.—RABBITS.

THERE are some considerable warrens upon the Longmynd, the brown Clee-hill, and on the Morf. Those in Longnor Park, and in Frodesley Park, have been destroyed, and I do not know of any in private grounds that are regularly preserved.

“ Rabbits have of late been much destroyed, by reason of the commons upon which they were bred having been enclosed ; and in some parts of the county they are seldom to be met with, except in a tame state. If a piece of land suitable to the purpose was to be set apart for a warren, it is probable that the profit would be equal to any other mode of husbandry, if not beyond it*.”

SECT. VI.—POULTRY.

THERE is not any particular breed of poultry in this county. Geese are reared on the commons, and sold to the farmers, who fatten them in their stubbles, and with

* The late Mr. LLOYD, of Aston.

grain afterwards. Some farmers rear large quantities of turkeys, particularly within the Honour of Clun, though I know of no local circumstances that influence their doing so. These turkeys are bought up by persons who drive them to Birmingham and other large towns. The markets of the county are well supplied with turkeys, geese, fowls, and ducks. It is to be lamented that they are generally carried alive to market. Death is no misfortune to an animal that has no previous apprehension of it. But poultry, carried in bags or baskets to market, have several hours of previous suffering, and the burthen and trouble of carrying them thither seems much increased thereby. It is a point of duty, not to put any animal to needless pain. The higglers who bring poultry to London, carry them thither after they have killed and plucked them. A few housewives in this county prepare their geese in the same manner, looking to a profit from the feathers. It should seem then, that all persons employed in selling poultry may afford a cheap obedience to duty, when it is considered that the commodity may be carried more conveniently to market when dead, and that there is an extra gain by the feathers.

SECT. VII.—PIGEONS.

THERE are few pigeons bred for sale in this county. Though pigeons pick up grain that would otherwise be lost, yet they do much damage in fields newly sown with grain, as well as where the grain is almost ripe. They are also very detrimental to thatched roofs, and more so to those with tile and slate, as they pick out the mortar and so loosen the cover, and especially the crests, where they

they can get at the cement easily. If there is any profit in pigeons, it probably is from the manure gotten out of the dove-houses.

“Pigeons, probably, are more expensive than profitable, for though you do not see what they eat, yet it is to be remarked, that when there is no plunder for them in the fields, they are in a poor hungry state*.”

SECT. VIII.—BEEES.

SEVERAL of the farmers and cottagers keep a few stalls of bees, and sell the honey.

* The late Mr. LLOYD, of Aston.

SECT. VII.—PIGEONS.

There are few pigeons bred for sale in this country. Though pigeons pick up grain that would otherwise be lost, yet they do much damage in fields, and sow with grain as well as where the grain is sown. They are also very detrimental to hatched roots, and more so to those with the seed and stalk, as they pick out the seed, and so loosen the cover, and especially the cereals, where they

CHAP. XIV.

RURAL ECONOMY.

SECT. I.—LABOUR.

THE price of labour will be found in the 6th Section of the 4th Chapter. That Section being appointed for an account of farming expenses, naturally led to the detail of it in that place.

SECT. II.—PROVISIONS.

“THE prices of provisions vary a little according to the population, but the canals will regulate that very much. The returns made to government will best shew the general prices of grain, &c*.”

“The present price of provisions (such as are used in the farmers’ family) is as follows:—Flour 6s. per bushel, weighing 56lb.; cheese 3½d.; beef 3d.; mutton 3½d.; veal 3½d.; bacon 6d. per lb.; and potatoes 1s. 6d. per bushel: this I consider the average price of the last five years†.”

This account, though given in 1794, appears like a report from ancient times; under a feeling of prices, double in the lowest instances, and quadruple in the highest.

* Original Report.

† Mr. TENCH.

SECT. III.—FUEL.

“THE whole county is plentifully supplied with coals, from four to six shillings per ton, at the pits *.”

The price of coal, as above mentioned, has risen considerably, and even then, that price was applicable only to the collieries of the East district. At the Clee-hill collieries, and all the smaller ones, the prices were 8s. and to 10s. 6d. the ton or stack. In the S. W. district are houses (I speak not of cottages) where no coal, perhaps, was ever burnt. Peat is a common fuel there, and wood. Coppice-wood of twenty years growth can be bought for 6l. and 7l. the acre, and cord-wood at 8s. and 9s. the cord. The only coals that can be brought to the S. W. district (except they should be imported by the Montgomeryshire canal) are those that are dearest at the pits, and the distance for land-carriage is very great; in some instances above 20 miles.

* Original Report.

CHAP. XV.

POLITICAL ECONOMY, AS CONNECTED WITH,
OR AFFECTING AGRICULTURE.

SECT. I.—ROADS.

“THE roads in this county, both turnpike and private, are generally bad; the private ones, particularly in the clay part of the county, are almost impassable to any but the inhabitants, notwithstanding there have been many acts of parliament, with a view to make them perfectly good, which end, if it could be obtained, would be a most important step to improvement in agriculture. There are already sufficient resources given by divers acts of parliament, for enforcing statute duty, and raising the supplies by assessments upon the inhabitants; but in several of the arrangements, I humbly conceive, the acts are very deficient, and which occasions the general failure in the desirable end for which they were passed.

IMPROVEMENTS OF THE ROADS.

“In lieu of surveyors in each parish (who are generally chosen in turn, and consequently have neither time nor experience sufficient to act properly, and are generally not inclined to exert themselves by enforcing the duty, &c.) I would propose for the magistrates to have power to appoint a proper surveyor with a salary, who should act

under their direction, and be amenable to them for their conduct; such surveyor, to undertake the arrangement of a certain district (say 10 miles square) whose duty it should be, to employ deputies, to call in and see the statute duty done under his direction: by this means the forming of the roads, which is the first principle, would be done in the most approved method, and the statute duty regularly called out. There may be an inspector, an inhabitant in each parish, appointed, and chosen yearly, whose interest it would be, as well as his duty, to act as a check upon the general surveyor and his deputy; this office being easy, might be filled by one of the most liberal persons in the parish. I apprehend that an arrangement of this sort would very soon ensure good private roads. And something like the following would procure us good turnpike roads also, namely, the trustees of all the turnpike roads throughout England, to be obliged to erect weighing engines, at all their gates or bars at which tolls are received, on or before the 24th day of June next, the expense of such erections to be repaid to them, by their being empowered to add to their present respective tolls, any sum to be paid by such carriage to be weighed, not exceeding so much as has been heretofore paid within one year last for the tolls; such sums to be paid, until all expense of erecting the said engines shall be fully repaid. The account of such repayment to be made out, and settled by the clerks and gatekeepers belonging to the respective roads, and to be attested upon oath before two justices of the peace. And from and after the said 24th day of June next, it may be lawful for all carriages to be drawn with any number of horses along any turnpike road.

“ But to prevent the injuries done to the roads, by the great burdens too frequently drawn along them, it should be enacted, that from and after the said 24th day of June,

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it should be lawful for all trustees appointed by any act or acts of parliament, for the repair of any turnpike road, or any five or more of them, and they should be required at a public meeting, to be held for that purpose on or before the 24th day of April next, to order to be erected at all the gates and bars which they have erected or shall erect, for the receiving of tolls, or upon any part of the road within their respective jurisdictions, and at such a distance from any turnpike, bar, or toll-gate, as they shall think requisite and expedient to order, and cause to be erected, a crane, machine, or engine proper for the weighing of carts, waggons, or carriages conveying any goods or merchandize whatever; and by a writing signed by them, or any five or more of them, to order all and every such carriage or carriages which shall pass loaded through any such gate or bar, to be weighed, together with the loading thereof, and for them, or any five or more of them, or for any person or persons empowered by any five or more of them, to receive and take, over and above the tolls already granted, or hereafter to be granted, the sum of 10s. for every hundred weight of 112 lb. to the hundred, which every waggon or cart hereafter described, together with the loading thereof, shall weigh, over and above the weights hereafter allowed to each of them respectively; (that is to say) to every waggon or four wheel carriage, having the fellies or rollers of the wheels of the breadth of 16 inches, 8 tons in Summer, and 7 in Winter; to every waggon or wain, having the axletrees thereof of such different lengths that the distance from wheel to wheel of the nearer pair of the said wheels be not more than 4 feet 2 inches, to be measured at the ground, and that the distance from wheel to wheel, of the other pair thereof, be such, that the fore and hind wheels of such

waggon and wains, shall roll only one single surface or path of 16 inches wide at the least, on each side of the said waggon or wains, and having the fellies thereof of the breadth of 9 inches from side to side at the bottom or sole thereof, 6 tons 10 cwt. in Summer, and 6 tons in Winter; to every waggon or four wheel carriage, having the sole or bottom of the fellies of the wheels of the breadth of 9 inches, 6 tons in Summer, and 5 tons 10 cwt. in Winter; to every cart, having the fellies of the same dimensions, 3 tons in Summer, and 2 tons 15 cwt. in Winter; to every waggon having the sole or bottom of the fellies of the wheels of the breadth of 6 inches, 4 tons 5 cwt. in Summer, and 3 tons 15 cwt. in Winter; and to every such waggon so constructed as to roll and actually rolling a surface of 11 inches by the wheels thereof, 5 tons 10 cwt. in Summer, and 5 tons in Winter; to every cart having fellies of the wheels of the same dimensions, 2 tons 12 cwt. in Summer, and 2 tons 7 cwt. in Winter; to every waggon having the sole or bottom of the fellies of the wheels of less breadth than 6 inches, 3 tons 15 cwt. in Summer, and 3 tons 12 cwt. in Winter; and to every cart having the fellies of the wheels of the same dimensions, 1 ton 15 cwt. in Summer, and 1 ton to 12 cwt. in Winter. And if such trustees as aforesaid shall neglect to erect such engine at their respective gates by the said 24th day of June, then it shall and may be lawful for any mortgagee or mortgagees of the said gate or gates to erect such engine or engines, and to take upon them the same power as the said trustees were by the act invested with, and under the same regulations, on or before the 29th day of September next; and if the said trustees and mortgagees, shall neglect to erect such engine or engines, by the respective times herein before stipulated, for erecting the

the same, then it shall and may be lawful, for all horses, carts, and other carriages, from and after the said 29th day of September next, to go through and pass along such road or roads, without any obstruction or payment for tolls whatsoever, until such trustees or mortgagees shall erect such weighing engine or engines as aforesaid, and occasion the same to be regularly used; any thing contained within the respective acts for turnpike roads, to the contrary notwithstanding.

OBSERVATIONS ON THE GOOD EFFECTS OF THE
ABOVE ALTERATIONS, WITH REASONS FOR MAK-
ING THE SAME.

“ First, The weighing engines will sufficiently prevent carriages of all sorts being overloaded, which will be a preservation of the road, whereas, the restraint upon the number of horses does not answer the purpose; for a short and overpowered team, does more damage to the roads, than a greater number of horses, which draw easy, and consequently pass along much quicker. That disagreeable restraint will be thereby made unnecessary, which empowers and encourages some poor indolent wretches to wander about the country, with their ready printed notices, to catch a prey, which when got, is lavished away in drunkenness, debauchery, and disorder; and if they fail in their lawful attempt, which is often the case, and perhaps distressed to the greatest degree, being despised by persons of all denominations, pursue poaching and fowl-stealing, which lead to greater acts of thievery, of which there are many instances; for all the convictions are grounded upon the poor wretches, as above described, being by the law allowed to be the credible witnesses, who obtain the reward to the amount of 5l. or more, when

the team owner's servant or servants are all deemed prejudiced: so that as the act now stands, no one is safe from these convictions.

“ The occupiers of farms in general, particularly those upon the middling sized ones, find themselves very much oppressed and injured by the law now subsisting for regulating the turnpike roads, by their being restrained from drawing more than four horses in waggons, the fellies of the wheels thereof being under six inches broad. Were farmers permitted to draw any number of horses, it would be of great public utility in lowering the price of those animals, which is now enormously high; the farmer would find it his interest, as formerly, to keep breeding mares, which, with the colts they breed, may be made useful great part of the year, provided they may be worked easy. The law as it now stands, acts nearly as a prohibition to farmers breeding horses; for a breeding mare, or a colt under five years old, is not fit to draw one of four in a waggon, with no more than 60 bushels of barley or wheat, which is the common load of the Shropshire or Staffordshire farmers, neither of which being more than two tons, which is considerably under the weight the present act allows to be drawn on the turnpike roads in Winter. Before the said turnpike laws were in force, the farmer's team, to draw his 60 bushels of wheat or barley, consisted of six in number, two of which, at least, were mares either in foal or sucklers, two colts*, one of them two, the other three years old, which were never oppressed or hurt by their work; consequently a succession came on, and the owner had one or two good sound colts to sell off every year to the harness or draught, as they best suited. Good waggon horses were then bought at

* The horse tax also prevents this practice at present.

from

from 10l. to 15l. each, which are now, by their scarcity, from 25l. to 35l., and those for the coach, that is, the light active half blood horses, are from 40l. to 60l.

“Another evil occasioned by this law is, that such farmers are obliged to keep horses of the largest size, which consume the produce of much land, by eating a large quantity of corn, when the smaller horses, working easy, seldom eat any.

“It is humbly conceived, that upon this principle, a law for regulating the roads may be enacted, so as to answer every good design of the present, and at the same time relieve those individuals who are exceedingly injured, and also be of general utility. I hope I shall not be thought to digress too much from the subject of agriculture, when it is considered, that good roads are the first improvement to be made upon an estate, where the roads are bad; and I verily believe, that a petition to parliament, to obtain the above alterations, would be signed by every person interested in the counties of Salop and Stafford. I have taken the liberty to send one enclosed, for the society's inspection, and if some such method shall be recommended by the society, I beg to be considered at their service, to send a clerk round the counties, for the signatures of those who may approve of the measure*.”

“The turnpike roads of this county are, in general, tolerably good, where they have not an over proportion of heavy carriage; but as that is likely to be taken off in a great degree by the introduction of canals, it is to be hoped that the roads, ere long, will be greatly improved. The roads in the Oswestry district have for many years been kept in good repair; and this, in a great measure, owing to the regular meeting of the trustees and magis-

* Original Report.

trates on the last Thursday of every month, when the principal public business of the neighbourhood is transacted, as well as that relating to the turnpike roads.

“ The private roads are by no means properly attended to ; and which may be attributed to the general highway act being so easy of evasion, that every farmer is able to avoid doing statute duty, or, at least, next to none. Nothing is more valuable than *time*, especially to a man of business, and a farmer who executes the office of surveyor of the highway, *impartially and effectually*, will find he must neglect no small part of his own business, and after all he might, perhaps, have been as little out of pocket, had he done the whole work with his own team and labourers. There is no trick, evasion, or idleness, that shall be deemed too mean to avoid working on the road : sometimes the worst horses are sent ; at others a broken cart, or a boy, or an old man past labour, to fill : they are sometimes sent an hour or two too late in the morning, or they leave off much sooner than the proper time, unless the surveyor watch the whole day. It is true, that redress may be had by application to a magistrate ; but then how often causes for complaint occur ? and how many days must be lost to bring each home to the offender ? who, *from custom*, thinks he is doing no harm ; besides the constant breach of good neighbourhood that must be occasioned by these petty litigations. A remedy might easily be had in the following manner :—Abolish all personal service upon the highways. Let surveyors be appointed, as at present, who should have power, under the authority of two magistrates, to raise, by rate, certain sums that may be deemed necessary for the repair of the roads within the respective parishes and townships, and to account for the same at going out of office at the year’s end. The farmer, who acts as surveyor, might then be
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able to repair the highways when most convenient to himself, and when he could pay most attention to them without any interruption or impediment, whereas, at present, statute duty is often given up, or nearly so, from the difficulties arising in collecting it*.”

“The public roads are tolerably good, and are in a general state of improvement; the parochial roads are very indifferent, and capable of being improved, but are much neglected for want of proper surveyors†.”

In many of the midland and southern parishes of Shropshire, there is no tolerable horse-road whatever; and in some that have coal and lime, those articles are nearly useless, from the difficulty of bringing any carriage to them. This, like most other evils, in the political economy of this country, becomes ameliorated, in proportion as the proprietors of the larger estates reside upon them. To facilitate and enforce the effective service of the parochial surveyors, Mr. LOXDALE, of Shrewsbury, and clerk to the magistrates of the hundreds of Cundover and of Pimhill, has drawn up a very useful charge to be given to the surveyors (together with their appointment), containing the prescribed extracts. It is printed by Messrs. EDDOWES, of Shrewsbury, and I hope they have some copies for sale. In the present state and number of our turnpike roads, it seems more expedient to consider of their improvement, than to project new ones. Our best roads are made by buying the stones that may be picked off clover leys, &c. and breaking them small before they are used; and by skreened gravel, of which there is a tolerable supply near several roads, though the country they go through may be in general clay, the soils being so various and intermixed. Where the side of a road is at all gravelly,

* Late Mr. LLOYD, of Aston.

† Mr. TENCH.

and higher than the road, it is good to get and skreen that gravel, though apparently at an expense more than adequate, for the sake of letting in more sun and air.

The cutting of hedges by the sides of roads is not sufficiently attended to in this county, nor in any other that I have seen, and I think the evil is greater near London than in the country. High hedges, and trees in hedges by the sides of roads, are inconvenient, not only as they keep off the sun and wind, and deny the traveller the solace of observing the country he is passing through, but the leaves that fall off in Autumn obstruct the water courses at a critical season. When landlords want to fall timber, they should make a point of cutting that down first which grows near roads, and they should not raise trees in such situations.

Finger-posts seem not sufficiently frequent; and the hands should be lettered on both sides. It is also convenient to have the names of villages through which roads pass, painted upon boards, to be placed against the houses at either end. It gives useful information to some, and gratifies an innocent curiosity to many, at a trifling trouble and expense.

By the 13 GEO. III. c. 84, an act for reducing into one the general turnpike laws then existing, it is enacted, that no hedges, &c. shall be planted within 30 feet of the centre of any turnpike road, whilst a road to be taken out of enclosed lands is confined to half that breadth. I should wish this general clause altered, so that the breadth of every road should be determined by the circumstances of the country it goes through. A road of 60 feet, is, in general, a baneful breadth, not only as it is an unnecessary waste of land, but as it invites trespass and obstruction from stray cattle, &c. If it is intended to dig materials for mending the road out of the spaces left on each side,
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that is in itself an inconvenience, as such holes are dangerous if left unfenced; they are not safe often when fenced, as they project unexpectedly across the sides of the road, and the proper fencing of them is nearly as expensive as paying for materials to be gotten out of enclosed lands. When it is considered in how few ways any extensive good can be done by individuals, and that many well meant endeavours have a contrary effect, there is encouragement to attend to the roads, because, with moderate pains so employed, every foot person may walk drier and cleaner; and every horse, however pressed by riding or by drawing, may feel an alleviation of pain or burthen, in consequence of the roads being smoother or more level. That the pleasure or expedition of the traveller is promoted by the same means, is an agreeable recollection; but inasmuch as animal suffering is diminished, a duty of no mean sort is discharged.

By the 13 GEO. III. it is enacted, that the name, &c. of the owner of every waggon, &c. shall be painted in *large letters upon some conspicuous part of such waggon, &c.*; perhaps it would be better if the words, *front, or right hand side*, were inserted, instead of *conspicuous part*, because then the name, &c. would be more certainly seen, carriages in passing taking the left hand side of the road. If the size of the letters also was fixed (as in the case of those on dairy doors, &c.) it may be an improvement. The value of all regulations depends so much upon their being enforced, and so few persons will take the trouble to enforce, even the best regulations, that whatever tends to facilitate the detection of offenders is worth regarding.

SECT. II.—CANALS.

THE interesting Section that follows, is furnished by Mr. TELFORD, so well known in many parts of England and Scotland, as an engineer and an architect, and to whose general merit I am happy in this opportunity of bearing testimony.

SOME ACCOUNT OF THE INLAND NAVIGATION OF
THE COUNTY OF SALOP.

“In considering Shropshire as to its accommodation by inland navigation, we find, that in order to comprehend the subject properly, it must be separated into two distinct heads. Under the first, we may place that which is carried on by means of a navigable river; and, under the second, that which is accomplished by means of artificial canals.

“With regard to the former, the river Severn passing with many windings through the middle of this fertile valley, and being navigable for barges from near the town of Pool, in Montgomeryshire, before it enters the county of Salop, there seems good reason to infer, that water conveyance was practised in this district at as early a period as in any part of Great Britain, situated at an equal distance from the sea.

“It would be an amusing task to trace the historical progress of the navigation upon this fine river, wandering as it does through such a long continuation of fertile valleys, and connecting North Wales with Shropshire, Worcestershire, Gloucestershire, and the sea. But in a work like this, where local knowledge and practical information is chiefly had in view, it is necessary to confine ourselves
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to the district which is to be treated of, and to consider only the general effect which this navigation has had upon the adjacent country, to take some notice of its present state, and to propose such improvements as are evidently wanted, to enable the county to maintain the character which it so deservedly enjoys, for the fertility of its lands and the perfection of its mines and manufactures.

“ The benefits which the navigation of this river has spread over the county, are numerous and extensive ; it has rendered the towns on the banks, storehouses for the surrounding country.

“ The county town (chiefly from the advantage of the river) has, for several centuries past, been a sort of metropolis for North Wales ; the inhabitants of the county at large experiencing such a ready communication with the lower districts of the country, and also with the sea, have been induced to open mines of iron, stone, lead, lime, and coal, and likewise to establish very extensive manufactures of iron ; by means of those mines, and manufactures, much capital has been drawn into this district, a great market has been opened for the agricultural produce of the county ; the ready conveyance of fuel and manure has enabled the cultivation to be carried on even beyond the demands of the increasing consumption : and all have so operated together, as to increase the general wealth of the county.

“ Notwithstanding the many advantages which have arisen to the county of Salop from the navigation of this river, and the superiority which it has, in times past, given to the products of the mines and manufactures on its banks, when most of the other parts of the kingdom were labouring under the imperfections of land conveyance, over the roads which were scarcely passable, and with machines imperfectly constructed ; yet it is equally true, that while
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the system of land carriage has been completely changed, while artificial canals have been formed in many parts of the country, and the navigation of many of the other rivers in this island have been greatly improved; yet still the navigation of the river Severn has been suffered to remain in its natural and imperfect state; not one obstacle has been removed, nor has one improvement been yet introduced. In consequence of this imperfect state of the navigation, neither the exports nor the imports can be carried on with a facility any way proportioned to those parts of the kingdom which enjoy the benefits of improved water conveyance. From this defect the county of Salop has certainly, of late, been in some measure prevented from reaching that pitch of prosperity at which it would otherwise have arrived.

“The inconveniences attending the navigation of this river, arise chiefly from the following causes, viz.

“*First*, From the fords and shoals which are frequent in a river, the bed of which has a considerable declivity, and consists of matter of such different qualities.

“*Secondly*, From the deficiency of water in drought, and from the superabundance of it during rainy seasons; and,

“*Thirdly*, From the mode of hauling the barges by men instead of horses.

“These circumstances, taken together, render the navigation very imperfect; and the year 1796 afforded a striking instance of the degree of this imperfection, since during the whole of that year, there were not two months in which barges could be navigated, even down the river, with a freight which was equal to defray the expenses of working them. This interruption was severely felt by the coal-masters, the manufactures of iron, the barge-owners, and the county in general.

“The

“ The daily account of the state of the water in the river, which has been kept for many years past at Coal Port, and which forms a part of this Report, will shew the very irregular and imperfect state of the navigation.

“ The inconveniences arising from the irregularities of the water have always existed in some degree, but they have been greatly increased by the embankments which have lately been raised to protect the low lands in Montgomeryshire, and in the upper parts of the county of Salop. Formerly, when the river had arrived at a moderate height, it overflowed these low lands to a great extent, which thereby operated as a side reservoir, and took off the top waters of the high floods ; and these waters returning to the bed of the river by slow degrees, proved a supply for the navigation for a long time after the flood began to subside, but being now confined to a narrow channel, they rise suddenly to a greater height, and flow off with more rapidity than formerly ; whereby the navigation is at one period impeded by uncontrollable floods, and, at another, left destitute of a sufficient supply for its ordinary purposes.

“ To remedy the inconveniences attending the shallows, and the irregularities of the water, two plans have been recommended, the adopting of either of which would greatly improve the navigation.

“ By the first of these plans, a constant and regular navigation is proposed to be established, by means of curing the shallows which are in the river between Gloucester and Worcester, and of forming locks and wears from Worcester upwards. This improvement, it is presumed, might be accomplished, as the distances and falls are as follows :

STATIONS.

STATIONS.	Distances in miles.	Total falls.	Fall per mile.
From Buildwas to Bridgnorth, -	11	ft. in. 29 6	ft. in. 2 8
From Bridgnorth to Stourport, Wor- cestershire, -	18	41 9	2 4
From Stourport to Worcester, -	13	23 0	1 9
From Worcester to Gloucester, -	30	10 0	0 4
Total, -	72	104 3	

“ This plan, besides improving the navigation of the river, would enable the proprietors of the adjoining lands to water all the grounds which lay below the level of the locks, and they might likewise build corn-mills corresponding with the falls, with thrashing-mills, and other improved machinery for the purposes of agriculture. Besides the working corn-mills, another, and very important purpose would be accomplished by those proposed locks and wears, which is, the use of the river-water in working iron forges with all their appendages: at present, this great and increasing business is chiefly carried on by means of trifling brooks, often dry in the Summer, and at all times of very inadequate quantity. The water of the river would constantly afford a sufficient power, and the materials for the manufacture, and the markets for consumption, are all to be found on its banks, or connected with its navigation.

“ The second plan is to collect the flood-waters into reservoirs, the principal ones to be formed among the hills in Montgomeryshire, and the inferior ones in such convenient places as might be found in the dingles, &c. along the banks of the river. By this means the impetuosity of the floods might be greatly lessened, and a sufficient quantity of water preserved to regulate the navigation of the river in dry seasons, and likewise to answer many other useful purposes, such as the forming ponds for inland fisheries, the supplying artificial canals, and the watering of

of land. This, it is thought, might even prove the simplest and least expensive mode of regulating navigable rivers, especially such as are immediately on the borders of hilly countries.

“ With regard to adopting the mode of hauling barges by means of horses, instead of the present barbarous and expensive custom of performing this slave-like office by men, it is only necessary that a good towing-path for horses should be formed along the banks of the river, and which will no doubt take place, if any scheme of general improvements should ever be adopted. In the meantime, a laudable example has been shewn by Mr. Wm. REYNOLDS, of Ketley, who has formed a towing-path for horses near to the new manufactories at Coal-port, and has carried it on through his father’s property to the iron bridge, a distance of about two miles: this being along some rugged banks, and over some of the worst fords which are on the river, proves beyond contradiction, that this sort of towing-path is practicable at no extravagant expense, and besides, completely destroys the common objection of horse towing-paths where many rapids or fords intervene.

“ Thus far respecting the navigation of the river Severn, which is highly deserving of public attention, as, independent of the benefits it affords to Shropshire, it forms a grand chain of connexion with the inland navigation of the kingdom, which may easily be understood by considering the country through which it passes, and observing the various artificial canals which fall into it from all directions. And now, as far as regards Shropshire, I shall consider the second head, which is,

ARTIFICIAL CANALS.

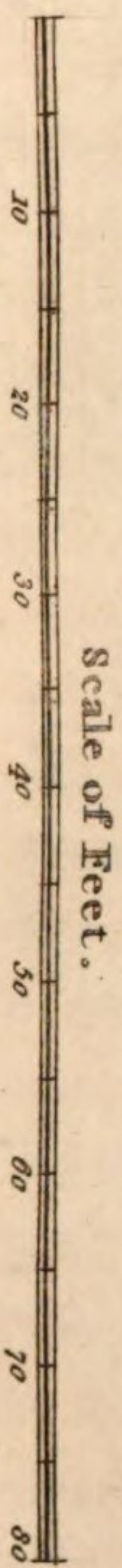
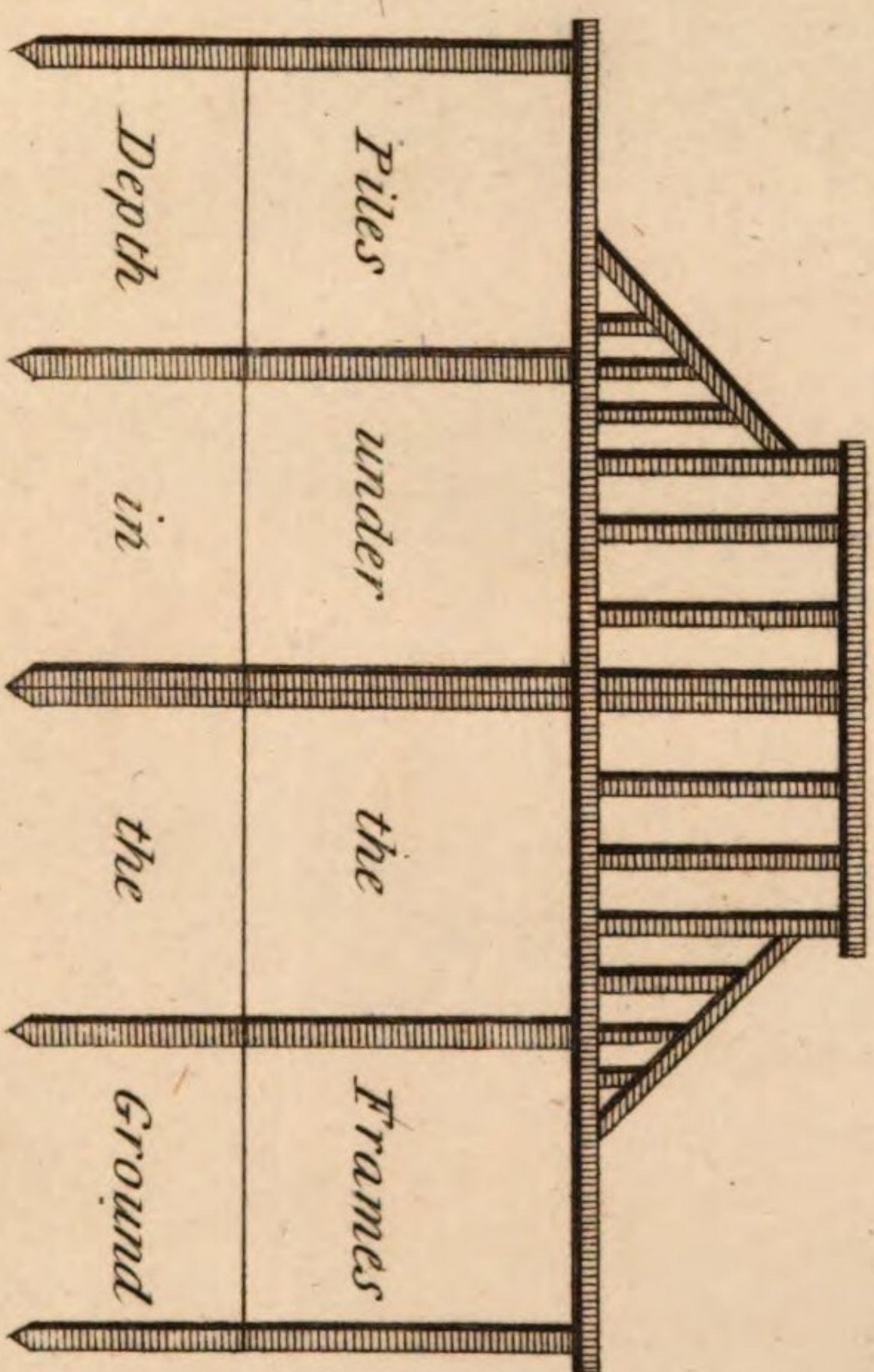
“ The county of Salop has not been among the first to adopt this valuable improvement, and it is probable that this backwardness ought to be accounted for, from its enjoying the benefit of so fine a river. But the general consumption of the kingdom at large, continuing to create a still greater demand for the products of the county, in mines and manufactures, as well as agriculture, these likewise extending, in the natural progress of improvement, to a greater distance from the river, and the expense of conveyance being thus proportionally increased, it has of late become an object of importance to improve, by some means, the mode of conveyance from the more distant works to the banks of the river.

“ The superior utility of navigable canals, had by this time been pretty generally ascertained, and they were found to be more especially advantageous in the removal of heavy articles; it therefore became evident, that a navigable canal was the means by which coal and iron could be sent from such distances as the *Oaken Gates* and *Ketley*, so as to reach the market on terms of competition with the same sort of articles which are procured nearer to the river.

“ But how necessary soever a navigable canal might be for those purposes, it was for a long time deemed an impracticable project. The general summit over which it must pass, lying on that range which is considered as nearly the highest ground in the kingdom; this ground being also very rugged, and consisting of ridges which are insulated from the adjoining country, there was no prospect of procuring a sufficient quantity of water for the purposes of lockage, the only mode of conveying boats from a higher to a lower canal, which had at that time been practised in Britain.

“ These

One side of y^e Gate sluice.



“ These seemed insuperable difficulties, and most probably might have proved so for ages to come, had not Mr. WILLIAM REYNOLDS, of Ketley (whose character is too well known to need any eulogium), discovered the means of effecting this desirable object: for he, about this time, having occasion to improve the mode of conveying iron-stone and coals, from the neighbourhood of the Oaken Gates to the iron-works at Ketley, these materials lying generally at the distance of about a mile and a half from the iron-works, and at 73 feet above their level; he made a navigable canal, and instead of descending in the usual way, by locks, continued to bring the canal forward to an abrupt part of the bank, the skirts of which terminated on a level with the iron-works. At the top of this bank he built a small lock, and from the bottom of the lock, and down the face of the bank, he constructed an *inclined plane* with a double iron railway. He then erected an upright frame of timber, in which, across the lock, was fixed a large wooden barrel; round this barrel a rope was passed, and was fixed to a moveable frame; this last frame was formed of a size sufficient to receive a canal boat, and the bottom upon which the boat rested, was preserved in nearly an horizontal position, by having two large wheels before and two small ones behind, varying as much in the diameters as the inclined plane varied from an horizontal plane. This frame was placed in the lock, the loaded boat was also brought from the upper canal into the lock, the lock-gates were shut, and on the water being drawn from the lock into a side pond, the boat settled upon the horizontal wooden frame, and as the bottom of the lock was formed with nearly the same declivity as the inclined plane, upon the lower gates being opened, the frame with the boat passed down the iron railway, on the inclined plane, into the lower canal, which had been formed on a level with the Ketley iron-works,

being a fall of 73 feet. Very little water was required to perform this operation, because the lock was formed of no greater depth than the upper canal, except the addition of such a declivity as was sufficient for the loaded boat to move out of the lock; and in dry seasons, by the assistance of a small steam engine, the whole of the water drawn off from the lock, was returned into the upper canal by means of a short pump.

“ A double railway having been laid upon the inclined plane, the loaded boat in passing down, brought up another boat containing a load nearly equal to one-third part of that which passed down. The velocities of the boats were regulated by a brake acting upon a large wheel placed upon the axis on which the ropes connected with the carriage, were coiled.

“ It is proper to observe, that Mr. REYNOLDS reduced the size of his canal boats, for instead of making use of boats of 70 feet in length, each carrying from 25 to 30 tons, he made them only 20 feet in length, 6 feet 4 inches in width, and 3 feet 10 inches deep; each capable of carrying eight tons. This inclined plane was completed in the year 1788.

“ As soon as the plan of ascending and descending by means of an inclined plane was fairly understood, every person was convinced that its principle was very applicable to the situation of the ground which lay between the Oaken Gates and the river Severn, and that this invention alone would obviate the difficulties which before had been considered as insurmountable. Under this impression, a subscription was entered into, and an act of parliament was obtained for the Shropshire canal.

“ The general direction of this canal is nearly from North to South: it commences on the north side of the London road from Shrewsbury, at a place called Donnington Wood, and proceeds about 100 yards on a level;

it

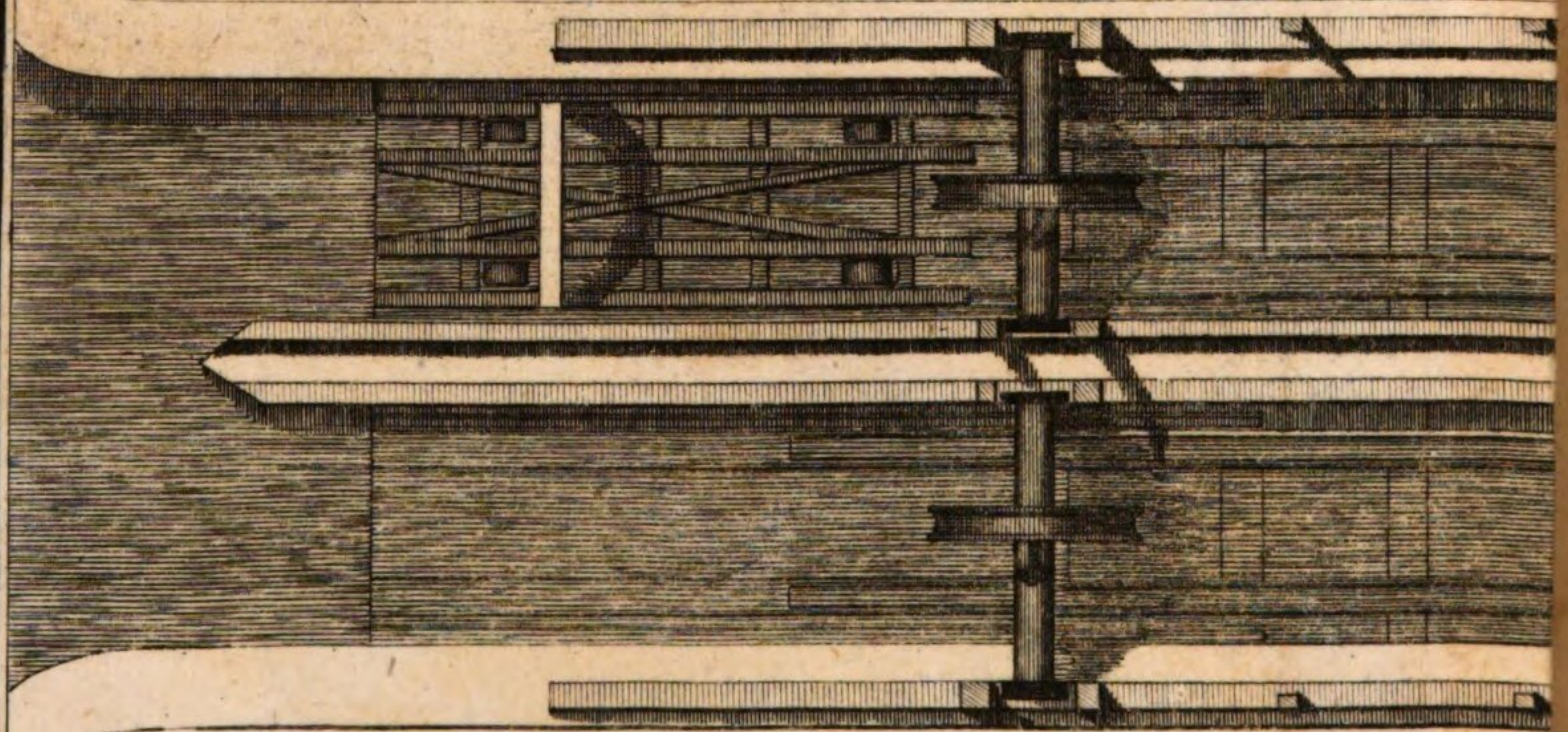
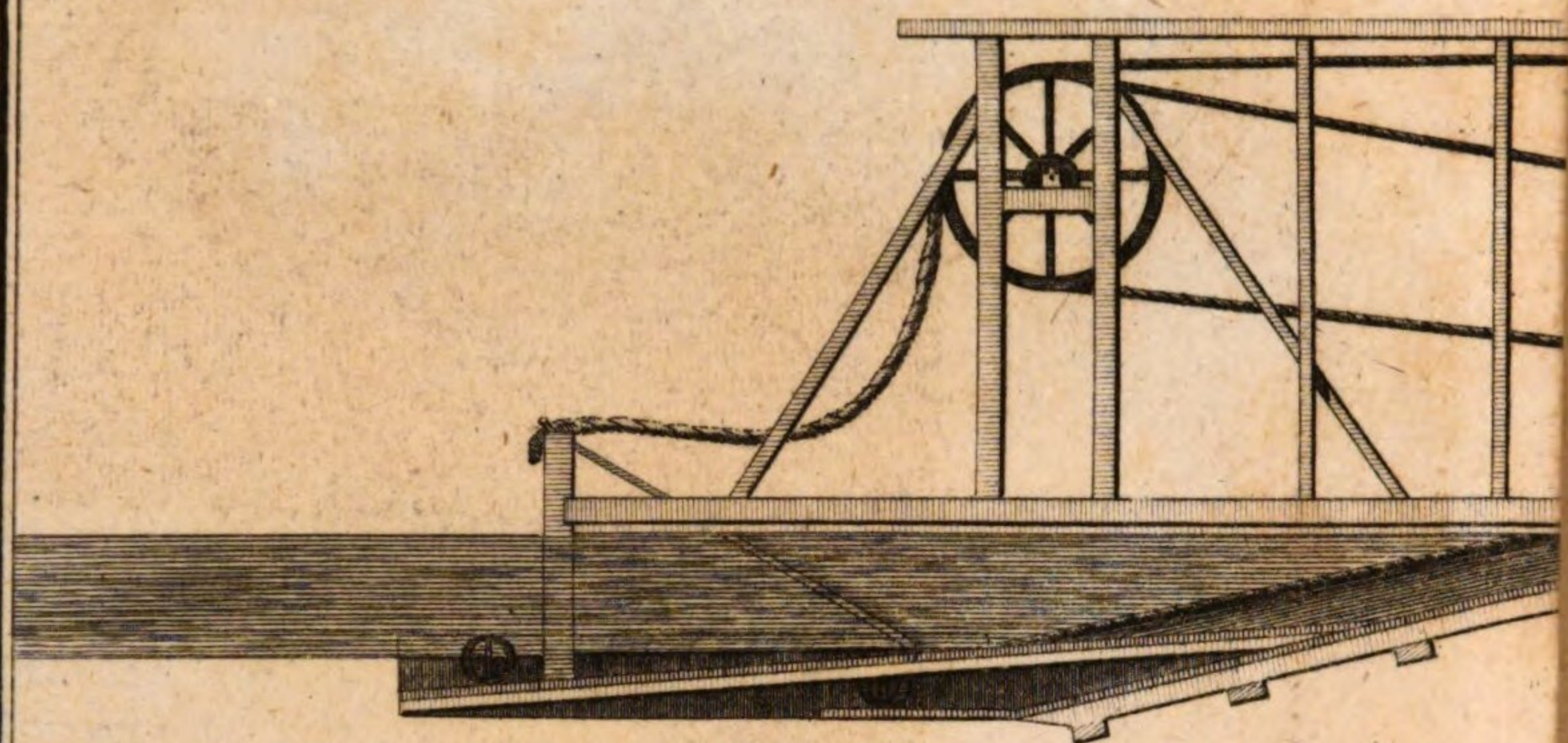
it then ascends 120 feet by an inclined plane of 320 yards in length. From the top of this inclined plane (which is the summit level of the canal) it passes on through the Wrockardine and Snedshill coal and iron-stone works, and near the Oaken Gates is joined by the Ketley canal, (before mentioned); from thence it goes on by the Holingswood iron-works, and having passed near to the Old Park iron-works, proceeds to Southall-bank, where a branch striking off to the right, passes near to the Lightmore and Horsehay iron-works, and terminates at Brierly-hill, near to Coalbrook-dale. The main line of the canal, turning to the left at Southall-bank, goes on to the Windmill farm, where it descends 126 feet, by an inclined plane 600 yards in length: from the bottom of this inclined plane it passes on to the east of Madeley, until it reaches the banks of the Severn, at about two miles below the iron bridge; here it descends 207 feet, by an inclined plane which is 350 yards in length. From the bottom of this inclined plane, and on a level above the reach of the floods, it passes on parallel with the river, to Coal-port, where it terminates.

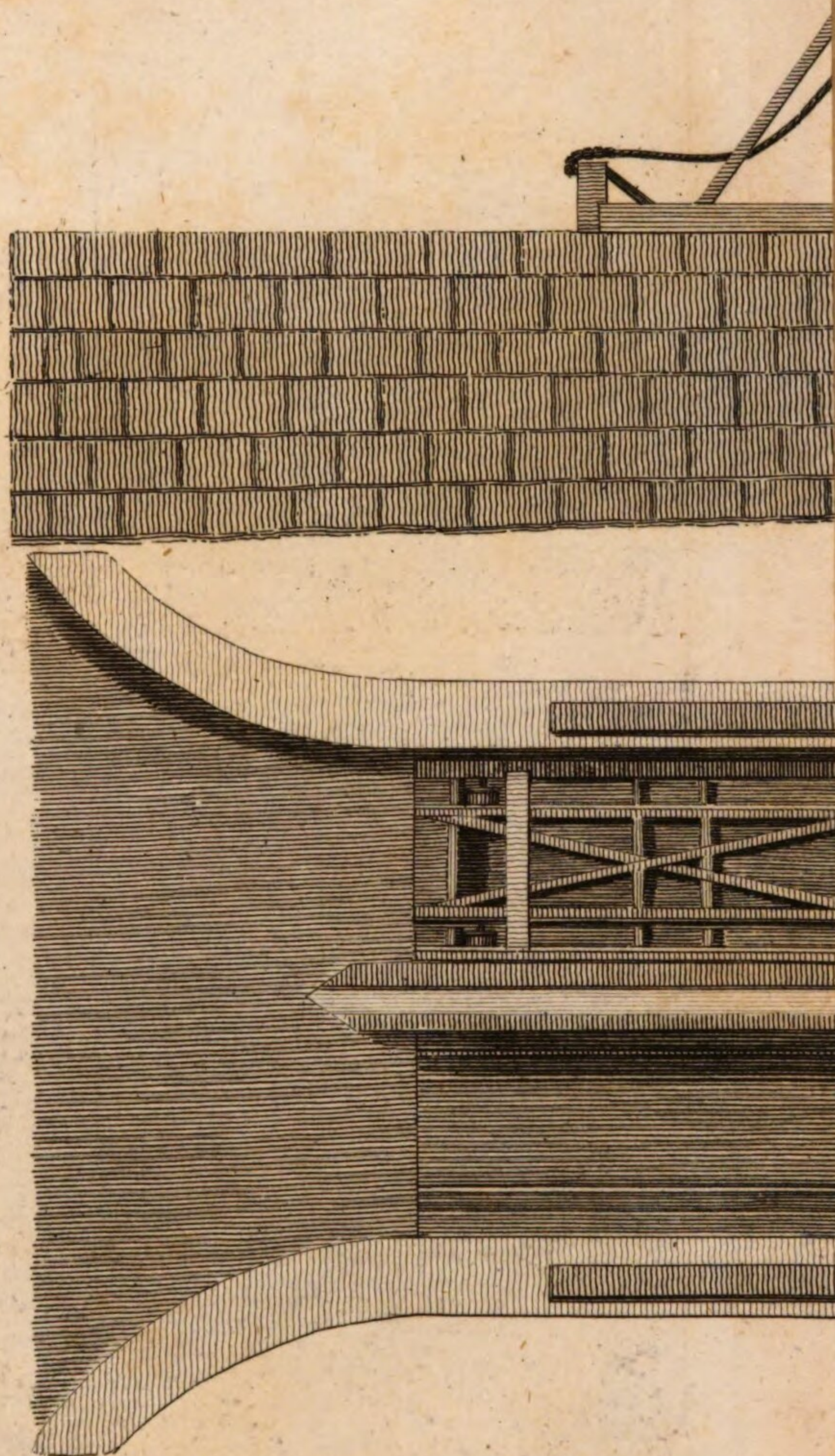
“ Statement of the distances, rise and fall.

STATIONS.	Distances.			Rise.	Fall.
	Miles.	Qu.	Yds.	Feet.	Feet.
From Donnington Wood to the bottom of the Wrockardine Wood inclined plane			100		
Inclined plane			320	120	
From the top of the inclined plane to the junction with the Ketley Canal	1	1			
From the junction with the Ketley Canal to Southall-bank	3				
From Southall-bank to Brierly-hill	2	3			
From Southall-bank to the Windmill inclined plane		3			
Inclined plane			600		126
From the bottom of this inclined plane to the top of the Hay inclined plane	1	1			
Inclined plane			350		207
From the bottom of the inclined plane to Coal-port		3			
Total	10	2	50	120	333

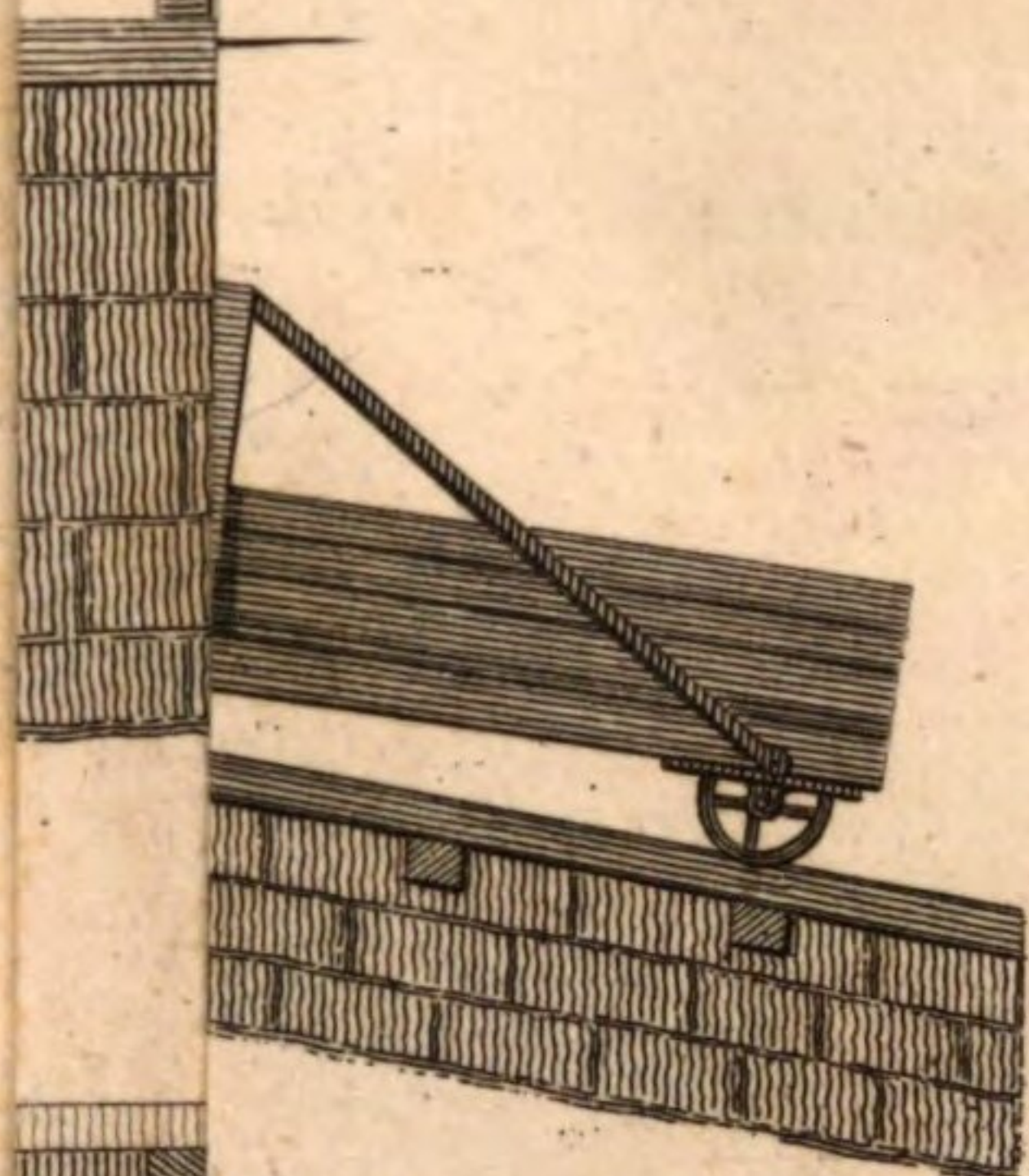
“ The inclined planes which were adopted on the Shropshire canal, were upon the same principle with that which Mr. REYNOLDS had erected on the Ketley canal ; and the only variations from it were, that in place of the upper canal ending in a lock, it was terminated by a small inclined plane, which commenced at the bottom level of the canal, and was brought up above top water level of the canal, and a steam engine was so placed as to work the axis of the wooden barrel of the upright frame formerly described. By means of this engine, not only the loaded boats are raised out of the upper canal, up the small inclined plane, without loss of water, but there is brought from the lower level, up the inclined plane, a boat with a load equal to that which passes downwards at the same time. The form of this machine, and the manner in which the steam-engine is connected with it, will be readily comprehended by referring to the annexed engravings marked No. 1 and 2, which have been carefully copied from those made out by Mr. HENRY WILLIAMS, the resident engineer, under whose directions the machines were erected, and on whose accuracy and veracity the public may with confidence rely: the distances, rise and fall of the canal having likewise been furnished by him, may be considered as equally correct.

“ The branch which turns off to the right at Southallbank, and which terminates at Brierly-hill, near Coalbrookdale; is principally for the purpose of sending down coal and iron for exportation, and for the use of the works at Coalbrookdale, and for bringing up lime-stone for the use of various iron-works on the summit-level of the canal, and about Ketley and the Oaken Gates. At Brierly-hill this canal terminates at a very abrupt bank, the skirts of which are on a level with the iron-works of Coalbrookdale. The communication between the canal and this
lower





Station
Planes
WIMBORNE CANAL.
on of the
LINE.



lower level, was for several years carried on by a method different from the inclined plane. A tunnel on the lower level, was carried into the bank, until it was brought just under the termination of the canal; here two perpendicular pits were sunk from the upper surface downwards, until they reached the tunnel; a large barrel, with a brake wheel upon it (similar to that described for the inclined planes) was placed between the two pits; a frame was erected for the support of a pulley, over which the rope passed, which was connected with the great barrel: adjoining to each of these frames a crane was erected, whose arm reached over the canal, in one direction, and when turned round, it reached to the centre of the pit. For the convenience of this mode of conveyance, all the materials were loaded in crates made of iron, four of which filled a boat. When one of the boats, so loaded, was brought within the reach of the arm of the crane, another boat (but empty) was placed near to the opposite pit, and within reach of the arm of another crane. Upon a signal made by the person at the bottom of that pit, that a crate of limestone was attached to the rope hanging therein, the man at the crane, which had by this time raised a crate from the loaded boat in the canal, and carried it over the pit, by lowering it upon the hook fastened to the rope now coiled upon the barrel, gave it such a preponderancy, as to draw the crate with limestone up to the top of the pit, which, upon its arrival there, was taken off the hook with the crane and placed in the boat: while this was doing, the crate which had descended was fixed upon a carriage on the level railway below; and this operation was constantly repeated, ascending and descending alternately.

“ These pits were each 10 feet diameter, and 120 feet deep. *in solid levels when going but sometimes but*

“ But this method not having been found to answer so well as the inclined planes, it has been left off some time ago, and there is now a small inclined plane erected in its place. On this inclined plane (there being no steam-engine attached to it) the descending crate does not bring up a crate with so large a quantity as when the perpendicular machine was employed, but there is more business done in the same time, by means of the inclined plane, and with a smaller proportion of manual labour.

“ Boats pass these inclined planes with considerable expedition. Mr. WILLIAMS informs me, that he has known six boats passed down, and six taken up the wind-mill inclined plane, which is 600 yards long, and 126 feet of fall, in the course of an hour; and in the performing this, the steam-engine and three men only were employed. The boats used on this canal are of the same size as those which convey eight tons, except in the depth, which is so much less, that these carry only five tons.

“ This canal being finished in 1792, was filled with water, and has since been kept up by means of the fire-engines which drain the mines in the neighbourhood, and two reservoirs, one of which lies below the level of the canal, and from this last the water is lifted by a fire-engine. Two small reservoirs have since been formed above the level of the canal.

“ This canal, carried over high and rugged ground, along banks of slipping loam, over old coal-mines, and over where coal-mines and iron-stone are now actually worked under it, is a satisfactory proof, that there is scarcely any ground so difficult, but where, with proper exertions and care, a convenient water conveyance may always be obtained. For this canal, with all its obstacles and difficulties, and being nearly eleven miles in length,

cost

cost only 47,500*l*. It has already paid at the rate of six per cent. upon this capital; and if the navigation of the Severn was improved, and the other connexions were completed, there is reason to expect that this per centage would be considerably increased; so that, independent of every other consideration, there is a prospect of its becoming a valuable object, even as a distinct speculation.

“ The benefits which have already arisen from this canal are very considerable. The numerous coal-mines and iron-works in its neighbourhood, have found a ready communication with the Severn; and the country at large has thereby enjoyed the benefit of an extensive supply, and a competition, which could not otherwise have been produced. At its northern extremity Messrs. REYNOLDS have erected a glass-house, and are preparing to carry on other works in that neighbourhood. On the banks of the Severn, *Coal-port*, also established by the genius and laudable exertions of Mr. WILLIAM REYNOLDS, bids fair to rival Stourport, and become a station for such articles as are brought up the Severn, not only for the consumption of the adjoining country, but for most of the eastern parts of the county of Salop, and also for a portion of Staffordshire.

“ Scarcely had the Shropshire canal been completed, before another canal of considerably greater extent was projected. The town of Shrewsbury, and the country immediately around it, are supplied with coal principally from the neighbourhood of the Oaken Gates, and which has hitherto been conveyed by land-carriage, about fourteen miles along the London road; and this part of the road, from the constant succession of heavy coal carriages, had become almost impassable, notwithstanding that large sums of money were annually laid out upon the repairs of it. The price of
coals

coals at Shrewsbury continued to rise year after year, and there was no prospect of being able to put a stop to the progress of this growing evil, unless by the means of a navigable canal, which would not only reduce the expense of carriage, but would likewise, by passing through, or near to a greater number of collieries, enable more proprietors to send their coals to this market; and these considerations, joined to the prospect of the agricultural improvements, which promised to follow from the cheaper and more expeditious conveyance of lime and other manures, led to the foundation of the company, which entered into a subscription, and obtained an act of parliament for making of the Shrewsbury canal.

“ From the Shropshire canal, at the bottom of Wrockwardine Wood inclined plane, Mr. WILLIAM REYNOLDS had carried a short canal on a level, along the face of the hill towards Ketley, for the purpose of conveying the produce of the mines there to Dodington iron-works.

“ The Shrewsbury Canal Company purchased about a mile in length of the north end of this canal: at the termination of this purchase, the Shrewsbury Canal Company erected an inclined plane of 223 yards in length, and 75 feet of fall: from the bottom of this inclined plane, the canal passes on by Eyton-mill to Long-lane, being a distance of about $4\frac{1}{4}$ miles, and in which there is a lockage of 79 feet; from thence it passes on to Long, where it crosses a valley of considerable length, and over the river Tern, at the height of 16 feet above the level of the surface of the meadow, by means of an aqueduct and embankment; near to this place it crosses the turnpike road, which leads from Wellington to High Ercall, Shrewsbury, and Wem; from this road it goes on to Rodington, where it crosses the river Roden, on an embankment and aqueduct at the height of
21 feet

21 feet above the surface of the river there ; from this place it passes on through Withington to near Atcham, where it crosses a turnpike road, and at half a mile to the north of the road enters a tunnel of 970 yards in length ; from the north end of the tunnel it passes on under Haughmond-hill to Pimley, where it crosses a valley on a small aqueduct and embankment : from thence it passes along the banks of the river Severn, and terminates in a large bason and coal-yard at that entrance to the town of Shrewsbury called the Castle Foregate.

“ There are several circumstances which are peculiar to this canal—one is, that the communication between the higher and lower levels is partly by means of an inclined plane, and partly by locks : a second is, that as small boats are used upon this canal, the locks are so formed as to admit of either one, three, or four boats passing at a time, without the loss of any more water than what is just necessary to regulate the ascent or descent of the boat or boats that are then in the locks. This is accomplished by having gates that are drawn up and let down perpendicularly, instead of being worked horizontally ; and each lock has three gates, one of which divides the body of the lock, so as to admit of one, three, or four boats at a time. A third, and perhaps the most striking circumstance is, that the canal passes over the valley of the Tern at Long, for a distance of 62 yards, upon an aqueduct made all of cast-iron, excepting only the nuts and screws, which are of wrought-iron ; and I believe this to be the first aqueduct, for the purposes of a navigable canal, which has ever been composed with this metal. It has completely answered the intention, although it was foretold by some, that the effects of the different degrees of heat and cold would be such, as

to

to cause expansion and contraction of the metal, which not being equal to extend or draw back the whole mass of the aqueduct, would operate upon the separate plates of iron, so as to tear off the flanches which connect the plates lengthwise, and break the joints. Others said, that the expansion of freezing water would burst the sides, and so break off the flanches which connect the sides with the bottom plates: but after the trial of a summer's heat, and the very severe frost of the winter of 1796, no visible alteration has taken place, and no water passes through any of the side or bottom joints. After the frost had continued very severe for three or four days, and the water had not been drawn off (although there is the means of doing so), but it had stood in the aqueduct about the height of two feet six inches, the ice had then frozen to the thickness of an inch and a half, but instead of having forced out the sides, it was melted away from them, and quite loose upon the surface of the water.

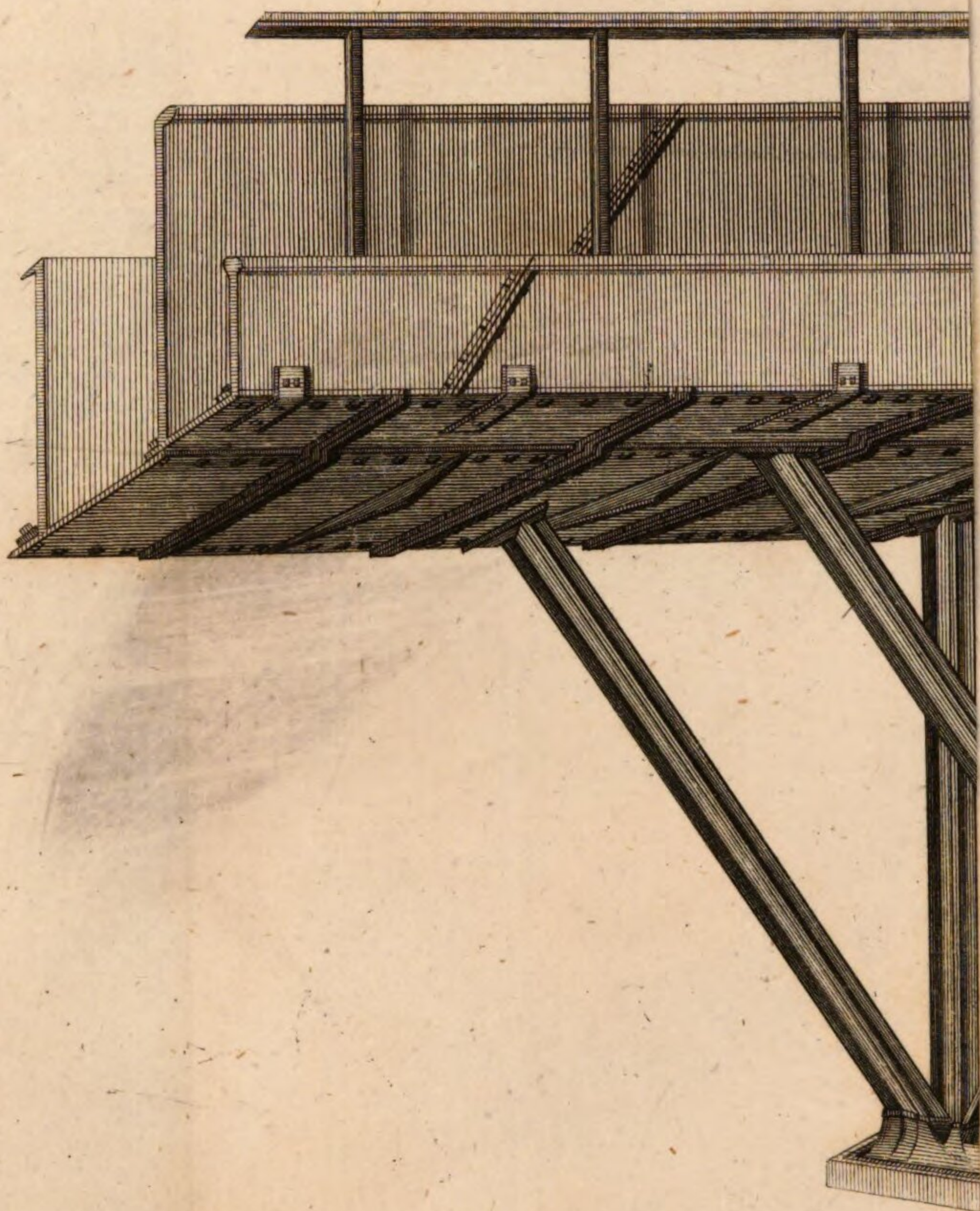
“ The idea of having this aqueduct made of cast-iron, was first suggested and recommended by THOMAS EYTON, Esq. then Chairman of the Committee; after due consideration it was approved of by the Committee, and the principles of construction, and the manner in which it should be executed, were referred to Mr. WILLIAM REYNOLDS and the Writer of this article, who, after several consultations, and forming and considering various plans, at last determined upon that which is represented by the annexed engravings, No. 3. The castings for the aqueduct were done at Ketley, and were removed to Long, a distance of five miles, partly by land and partly by water-carriage.

“ This aqueduct was proposed in consequence of the great floods which happened in the beginning of the year 1795, and it was fixed up complete in March, 1796.

“ Another

N^o 3.

of the IRON AQUED

RIVER TERN

Another circumstance (which I believe to be peculiar to this canal) deserves to be mentioned, as it may prove serviceable to those who may be concerned in the forming of other canals. What I mean to refer to, is the mode of constructing the towing-path which passes through the tunnel. This towing-path is three feet wide, from the wall to the outside of the railing; it is not a solid body, like to the towing-paths which are formed under canal bridges, but consists of standards of wood, which are fixed in stones placed in the inverted arch at the bottom of the canal, and is tyed into the side wall by bearers which are framed into the uprights; upon the bearers the planking is laid, which forms the road of the towing-path; a railing is placed along the top of the uprights, and a piece of wood is framed between them, at a little way below the top water-level, to prevent the boats from striking the uprights obliquely. By this towing-path being hollow below, there is a water-way in the tunnel, of ten feet, instead of seven feet, which would have been the case if the towing-path had been formed solid. This is an useful contrivance, because it preserves the water-way, and affords a towing-path, without going to the expense of enlarging the width of the tunnel; but it would still be an improvement, if the whole of the towing-path was constructed with stone or iron, instead of timber, and if it was made three feet six inches in width.

Besides the Shropshire and Shrewsbury canals, there is likewise another canal, which, although not wholly within the county of Salop, is yet so materially connected with it, as to require particular notice in this Report: it is called the *Ellesmere Canal*, and rather than one, is in fact a system of canals, distributed over that extensive and fertile district of country which lies between the banks of the Severn

Severn on the South, and those of the river Mersey on the North, and between the skirts of North Wales on the West, and the borders of Staffordshire on the East, a space of 50 miles in length, and more than 20 in breadth, exclusive of the valleys which open into North Wales.

“ This canal will unite the rivers Severn, Dee, and Mersey, and will, by this means, open a communication by water, from the above-mentioned districts to the ports of Liverpool and Bristol.

“ Although it is certain that this part of the country will reap many advantages (as to articles of commerce) from the communication which this canal will open to these two rival ports, yet it is true, that by far the most beneficial effects will follow from the influence which it will have upon the agriculture of the adjoining districts; and it is probably the first instance, in Great-Britain, in which the extension and improvements of agriculture have been the principal motives that led to the forming a navigable canal of so great an extent, and where manufactures, commerce, and the trade of large towns, have been only secondary considerations.

“ This canal commences at the south bank of the river Mersey, about nine miles above Liverpool, at a place now called Ellesmere Port, on the Mersey; from this place it passes along the low ground at the northern extremity of the hundred of Wirral, to the N. W. quarter of the city of Chester, where it forms a junction with the Chester and Namptwich canal; from this point of junction, it falls down into, and crosses the river Dee; from the south bank of the river Dee it passes on, over a plain (still in Cheshire) to the river Allen, parallel to which it ascends through Gresford Valley to near Gwersylt, in Denbighshire; here a branch turns off to the N. W. which, after passing near the Frood collieries, and near to Mr. WILK-

INSON'S

INSON's works at Brumbo, and the lime-works at Nanty-frith, terminates near the Talwern coal-works, in the county of Flint, where there is an opportunity, if wanted, of forming a reservoir of 82 acres, in order to supply this summit with water in dry seasons.

“ The main line of the canal passes on in a S. W. direction, and a little way above Mr. WILKINSON's works at Bursham; from thence it proceeds along the skirts of the hills, and through the various collieries which lye in the neighbourhood of Ruabon, to the banks of the river Dee, in the vale of Llangollen, at a place called *Pontcysylte*; it is here to cross over the valley, upon an aqueduct, at the height of 125 feet above the surface of the water in the river; at the south end of this aqueduct of *Pontcysylte* the line of canal passes immediately under the *Fron lime-works*; it afterwards crosses the road which leads from Holyhead to London, by way of Shrewsbury, a little way further on, and having left the Black Park collieries and the village of Chirk to the East, and Chirk Castle to the West, it crosses the river and valley of the Ceriog, and enters Shropshire by an aqueduct 200 yards in length, and 65 feet in height: it then passes about a mile along the south bank of the Ceriog, in an easterly direction; from thence it turns to the S. E. and passes along the lowest part of the country, to St. Martin's-moor, in the parish of St. Martin, where it descends by means of two locks, making together 13 feet of fall; it then passes on a level to Frankton common; at this place, and upon the same level, a branch turns to the East, which, after having passed close to the town of Ellesmere, proceeds by Welshampton to Fens-moss, where it divides; one part goes on to the town of Whitchurch, and the other terminates at Prees-heath, near to the village of Prees: and the whole of this Whitchurch

church and Prees branch, being 21 miles in length, is upon a level, and consequently without a single lock. From Whitchurch the canal falls down, by 128 feet of lockage, to the Chester canal, near to the town of Namptwich, in Cheshire.

“ At Frankton common, the main line of the canal descends 30 feet to Hordley, by means of four locks. From Hordley, a branch passes off to the S. W. and proceeds on a level to Aston-moor, in the parish of Oswestry, where it descends 19 feet, by means of three locks; from thence it passes to Crick-heath, under the limestone quarries, through Llanymynech, and about half a mile beyond that village, joins the Montgomeryshire-canal, at a lock belonging to that company. This Llanymynech branch is upwards of eleven miles in length, has 19 feet of fall, and passes most of the way through morassy grounds.

“ From Hordley the main line of the canal passes in a S. E. direction along the morassy moors of Hordley, and along the skirts of Baggy-moor, to Weston Llalling-fields, to which place it is now navigable: here it is to pass through a rib of land, by a tunnel of about 500 yards in length. From the south end of this tunnel, the line of canal passes (on the same level) through some rough boggy land, and near the villages of Newton, Basschurch, and Prescott, to Walford, and from thence near to the bank of the Severn, at Leaton-heath: at this place it takes an easterly direction, and passes, still upon the same level, to Ormond Park, which lies at the distance of nearly two miles from Shrewsbury; from Ormond Park it descends to Shrewsbury, by 107 feet of lockage, and falls into the river Severn at the north end of the town, at a place called Bagley-bridge, at no great distance from the termination of the Shrewsbury canal; and there is a power granted

granted by parliament, which enables the two companies to form a junction of these canals, if upon mature consideration such a plan should be deemed advisable.

“ This Ellesmere canal is formed for seventy-feet boats of seven feet beam, except the Winal-line, which is formed for boats of fourteen feet beam: its depth of water four feet six inches. When those parts for which parliamentary authority has already been obtained, shall have been completed, there will then be 56 miles in length of it, within the county of Salop; and of which the following is a statement :

NAMES OF THE STATIONS.	Dis- tances.			Level.	Rise from Severn at Salop.
	m.	f.	c.		feet.
From the Severn at Bagley-bridge to Ormund Park — — — — —	1	7	2		107
From Ormund Park to the junction with the Llanymynech line — — — — —	14	3	3	Level.	
From this junction to Frankton-common — — — — —		2			140
From Frankton-common to St. Martin's-moor — — — — —	2	6	6		153
From St. Martin's-moor to Chirk-bank — — — — —	4	4	7	Level.	
Llanymynech branch — — — — —	11	1			88
Whitchurch branch and Prees branch — — — — —	21			Level.	
Total	56	10	8		

“ The advantages which the county is likely to derive from this canal, are various and extensive; but the most important are the improvements in agriculture, which are expected to follow from the cheap and expeditious conveyance of coal, lime, and slates, and the easy communication which will be opened for markets of consumption for the produce of the land. The coal, lime, and slate, lye in the skirts of the Welsh hills, along or near to the line of the canal. All the North part of the county of Salop, has hitherto been supplied from thence by means of a tedious

tedious and expensive land-carriage; the consumption has, of course, been much confined, and the improvement of land, in the more distant parts, has thereby been much retarded. But when the value of these articles comes to be reduced, and when the supply, by means of the canal, is rendered regular and convenient, it is but reasonable to presume, that improvements will extend to those lands which now lye waste, and increase even upon those which are already under cultivation. The town and neighbourhood of Shrewsbury will be very essentially benefited by this canal, as, by means of it, the Denbighshire collieries will become a check upon those which lye in the neighbourhood of Ketley and the Oaken Gates.

“ The greatest portion of the county may likewise, by this means, have recourse to Liverpool, by a cheap and regular conveyance, for those articles of commerce which have hitherto been procured from Bristol, though often after long disappointments, from the tedious and imperfect navigation of the river Severn.

“ The communication between the iron-works of Coalbrook-dale and Ketley, and the iron-works in Denbighshire, having hitherto been effected in a languid manner, by the slow operations of land-carriage, will by means of this canal be regularly carried on by water; and this improvement of conveyance, will probably be the means of creating other works, and the discovery of other mines, which are as yet unknown and unexpected.

“ By means of this canal, and its offspring the Montgomeryshire canal, the fertile and populous county of Montgomery will be enabled to communicate more readily with Shrewsbury and all the North-East, and South parts of the county of Salop. In many parts of the county of Montgomery, the price of lime, coal and slates, will, by means of
of

of these canals, be greatly reduced: the produce of the lands and the exports from that quarter, will probably be increased, as well as the demand for articles to be imported; and as both what is sent away, and what is received in return, must pass through the canals in the county of Salop, this county must derive additional benefits from the increasing wealth of its neighbours.

“ If it had not been on account of continuing the chain of connexion between the Severn navigation and that by means of these artificial canals, which have been formed, or are now forming, to communicate therewith, I ought in point of priority of time to have begun with an account of a short canal which was formed by the Marquis of STAFFORD.

“ This canal commences at Donnington Wood, and proceeds on a level to Pave-lane, near Newport, a distance of about seven miles: there is also a branch to his Lordship's lime-works at Lilleshall, which formerly communicated with the canal by means of pits, but the business is now transacted by means of an inclined plane.

“ This canal was made for the purpose of conveying coals from his Lordship's works at Donnington to his lime-works at Lilleshall, and for public sale at the wharf at Pave-lane.

THE CONCLUSION.

“ Although Shropshire was behind most of the other counties in adopting the plan of forming artificial canals, it has of late made a rapid progress in the execution of this valuable improvement; and I may venture to say, that there has been more ingenuity displayed in the means taken for

overcoming the various obstacles which lay in the way of the canals of this county, than has hitherto been shewn in those of any other county in England.

“ The inclined planes, the small boats, the ascending and descending by means of pits, with the various machinery connected therewith upon the Ketley and Shropshire canals, and the iron aqueduct upon the Shrewsbury canal, were each of them new with regard to British canal-making; and a book has lately been published by an American of the name of FULTON, containing little else than an account of those discoveries, somewhat varied in the arrangement, and erroneously claiming them as the invention of the author. The circumstance would not have been noticed, if the book had not been published just at the time this Report was making out. His book will prove serviceable, by making the public more generally acquainted with much useful machinery; but the merit of invention, and of the particular application to canals, aqueducts, and bridges, belongs to the county of Salop. And it is necessary also to remark, that his zeal for a general system has led him to overlook many of the purposes for which locks are useful, even where small boats are to be used. In page 21 and 22, he says—

“ On viewing the operation of locks, it appears that if
“ they were constructed for small boats, suppose boats of
“ four tons, the delay in passing would be so great, that an
“ important trade would not be transacted, as it requires
“ almost as much time to pass a small as a large boat; for
“ instance, only a man arriving with six four-ton boats
“ (equal to what is usually conveyed in a boat of 25 tons)
“ at a lock constructed for small boats, he would be obliged
“ to separate them, and pass them singly, which would be
“ an operation of three minutes at least to each boat, to-
“ gether

“ gether with the time necessary for uniting them when
“ passing through, say four minutes, in all amounting to
“ 24 minutes ; a repetition of this operation, to mount
“ only 100 feet by 12 locks, would be a delay of 4 hours
“ 48 minutes : this would not only be tedious, but create
“ confusion wherever there was a number of boats passing,
“ even if passing the same way : how this would be in-
“ creased by those moving the contrary way, may easily
“ be conceived ; yet the twenty-five ton boats would move
“ through the first lock in five minutes at the utmost, and
“ passing through the succeeding 11 locks with the same
“ expedition, would rise to the summit-level in one hour ;
“ hence the twenty-five ton boats would have an advantage
“ in time, 3 hours 48 minutes. This calculation will suf-
“ ficiently prove the impropriety of constructing locks for
“ small boats : hence small and cheap canals cannot be
“ formed on the lock principle. Locks demand large
“ boats, that an important trade may be performed, and
“ large boats are the cause of increasing the expense of all
“ the other parts of the canal, in tunnels, bridges, aque-
“ ducts, land, reservoirs, diggings, &c. &c. which evi-
“ dently exclude every district which cannot support these
“ heavy expenses, and preclude every hope of giving to
“ agriculture and commerce the full force of so powerful
“ an agent as water conveyance.”

“ Thus having roundly stated the time that would be
lost in passing the locks with small boats separately, he in-
sists that locks demand large boats, and that large boats
increase the expense of all the other parts of the canal,
and likewise that locks are often out of repair, therefore
that locks ought to be totally exploded. But it is a mistake
that more time is required to pass locks, with an equal
quantity of tonnage, by the small than with large boats,

for on the Shrewsbury canal, four boats, each carrying eight tons, pass a lock at one time; and by that means, with small boats, 32 tons pass a lock in five minutes, whereas a seventy-foot boat would only pass it with from 20 to 25 tons in the same time. If the boat is made 70 feet in length, but of the same width and depth as the small boats, no other part of the canal will require any more expense than if constructed for small boats only. Locks, it is true, are sometimes out of repair, but being the simplest machines that have yet been made use of in canals, they are less liable to be put out of repair than any of the others, which are all of them more complicated.

“ Besides the canals which have already been executed, and those which are now in hand, several others yet remain to be undertaken, in order to render the inland navigation of this county complete. Some of these have already been proposed, and others I shall here take the liberty of recommending to the attention of the land-owners and the public. One of those which has already been proposed, is a canal which was to have commenced at a part of the Montgomeryshire canal, near to the town of Welchpool, and to have been carried along the vale which passes below the town of Montgomery, and so on to Bishop's Castle and to the Leominster canal, in Herefordshire. The purposes of this canal were chiefly to supply the country round Bishop's Castle, and between that place and Montgomery, with coal and lime, and to have opened a more direct communication from the county of Hereford to the counties which lye to the North of it. By means of this canal, with the Leominster canal to the South, and the Montgomeryshire and Ellesmere canals to the North, the inhabitants residing along the western extremity of the county

county of Salop would have the advantage of a water conveyance to both Liverpool and Bristol.

“ It has also been proposed to carry a canal from the Marquis of STAFFORD’s canal at Pave-lane, near Newport, to the town of Drayton, and from thence to the Grand Trunk, at or near to Stone, in Staffordshire.

“ By means of this canal, the North-East part of the county would be better supplied with coal and lime, and a direct water communication would be opened with the Grand Trunk Navigation, an object of considerable importance to all that part of the country, and also to the manufactures in the neighbourhood of Ketley and the Oaken Gates.

“ From Newport to Shifnal, and the boundary of the county to the S. E. and from thence to the river Severn, between Bridgenorth and Bewdley on the S. W. is a large tract of country, some parts of which are but indifferently situated for coal and lime; canal navigation might be introduced into this quarter, with great advantage to the inhabitants and the public.

“ But the district in which a canal is most wanted, is that which lies on the West side of the Severn; it reaches from Wenlock, on the North, to Cleobury Mortimer on the South, and between the river Severn on the East, and the road which leads from Church Stretton to Ludlow on the West; a space of upwards of 20 miles in length from North to South, and from 10 to 16 miles in breadth, from East to West. The soil is, in general, a strong clay, it wants only the advantage of easy communication, to render it one of the richest tracts in the county. The high ridge, called Wenlock Edge, which bounds the whole of the northern extremity of this proposed line of canal, consists entirely of limestone rock, of an excellent quality: near to the southern extremity of the proposed

x 4

canal

canal there is plenty of coal, and also some limestone; but the roads in this large district are so very bad, that at many seasons most of them are altogether impassable, nor can they be effectually improved at any reasonable expense, owing to the nature of the soil, and the scarcity of proper materials. From the general distribution of that part of the country, it is probable that a canal might be carried through the whole of this country, from the South Clee-hill on the South, to near Wenlock on the North, and from thence to near the road from Stretton to Ludlow on the West, upon nearly one level: by this means, the coal and limestone might be brought together at an easy expense, and the country would be supplied from wharfs formed at convenient distances along the canal: no person need then be under the necessity of going to a greater distance from home than from one to five miles for coal and lime, and by means of the canal, materials might be brought at an easy expense, to repair the roads which lead to and from the line of the canal. In proper places, collateral branches of canal might be carried down to the Severn, by means of which the produce of the country might be exported to the best markets, and the necessaries now procured with difficulty by an intolerably bad land-carriage, would then be regularly introduced by means of the branches and the canal. To any person who is acquainted with this country, and has considered the nature of the soil and the situation of the roads, the introduction of water conveyance, must at once appear a desirable plan for the general good. A canal might, I think, if properly managed, be made here at a comparatively moderate expense, and so as to answer well, even as a separate speculation."

" Since the year 1797, when the above account of the inland

inland navigation of the county of Salop was made out, another mode of conveyance has frequently been adopted in this county to a considerable extent; I mean that of forming roads with iron rails laid along them, upon which the articles are conveyed on waggons, containing from six to thirty cwt.: experience has now convinced us, that in countries whose surfaces are rugged, or where it is difficult to obtain water for lockage, where the weight of the articles of produce is great in comparison with their bulk, and when they are mostly to be conveyed from a higher to a lower level—that in those cases, iron rail-ways are in general preferable to a canal navigation.

“ On a rail-way well constructed, and laid with a declivity of 55 feet in a mile, one horse will readily take down waggons containing from 12 to 15 tons, and bring back the same waggons with four tons in them. This declivity, therefore, suits well, when the imports are only one-fourth part of what is to be exported. If the empty waggons only are to be brought back, the declivity may be made greater; or an additional horse applied on the returning journey will balance the increase of declivity. If the length of the rail-way were to be considerable, it may, without much inconvenience, be varied from being level to having a declivity of one inch in a yard, and by dividing the whole distance into separate stages, and providing the number of horses suitable for each portion of rail-way, according to the distance and degree of declivity, the whole operation may be carried on with regularity and dispatch.

“ Upon the whole, this useful contrivance may be varied so as to suit the surface of many difficult countries, at a comparatively moderate expense. It may be constructed in a much more expeditious manner than navigable canals; it may

may be introduced into many districts where canals are wholly inapplicable; and in case of any change in the working of the mines or manufactures, the rails may be taken up and put down again, in a new situation, at a moderate expense.

“Several districts of the county of Salop, and the adjoining counties, in which canals were once proposed to be made, have lately been surveyed, with a view of adopting iron rail-ways in place of navigable canals; and in many cases, I am convinced it will be found advisable to do so; so that in the instances where I have taken the liberty of mentioning that canals are much wanted, I beg leave to be understood to include iron rail-ways, and I strongly recommend, that in all future surveys it may be an instruction to the engineers, that they do examine the tracts of country with a view of introducing iron rail-ways, wherever difficulties may occur with regard to the making navigable canals.

“Since the year 1797, the act of parliament which had been obtained in the year 1772, for making a towing-path along the banks of the Severn, from the town of Bewdley, in Worcestershire, to Coalbrook-dale, in Shropshire, has been renewed; and the towing-path is now in part formed for the whole of that distance. Although the path is far from being perfect, the barges have been towed by horses, and the operation has proved fully equal to the expectations of the promoters of this plan.

“The iron and coal masters having experienced great inconveniencies from the caprice of the bargemen, have now taken up the business of the towing-path with great spirit, and I have no doubt but the exertions of that opulent and respectable body of men, will not only accomplish the completion of the towing-path, but will prove the means
of

of introducing further and more effectual improvements upon this fine river.

“ Since the year 1797, the works at Coal-port, which, as has already been observed, were established by Mr. WILLIAM REYNOLDS, on the banks of the Severn, at the termination of the Shropshire canal, about two miles below the iron bridge, have succeeded to a very considerable degree, and they are a striking proof of the good effects of an improved inland navigation. Formerly the place consisted of a very rugged uncultivated bank, which scarcely produced even grass, but owing to the judicious regulations and encouragement by Mr. REYNOLDS, joined to the benefit arising from the canal and the river, houses to the number of thirty have been built there, and more are still wanted, to accommodate the people employed at a large china manufactory, a considerable earthen-ware manufactory, another for making ropes, one for bag-making, and one for chains, which are now taking place of ropes for the use of mines and for other purposes.

“ In the china manufactory, not established more than five years, and in which perhaps the last, and including its dependencies, the most china is manufactured of any work of that sort in Great Britain, there are employed about 250 persons, and in the other works at this place, about 150 more, making in the whole 400 persons.

“ Among the improvements connected with inland navigation, the bridges over navigable rivers form no inconsiderable object. From the narrowness and lowness of the arches, they, in general, not only require that the masts of the barges be lowered, but they also cause a fall in the river and obstruct the towing-path.

“ In constructing bridges upon the river Severn a plan has been adopted which entirely removes these obstacles,
and

and renders the navigation as commodious under the bridges as in any other parts of the river.

“ The plan I here refer to, is the making the bridge of iron, of one arch only, and admitting the towing-path to pass within the archway.

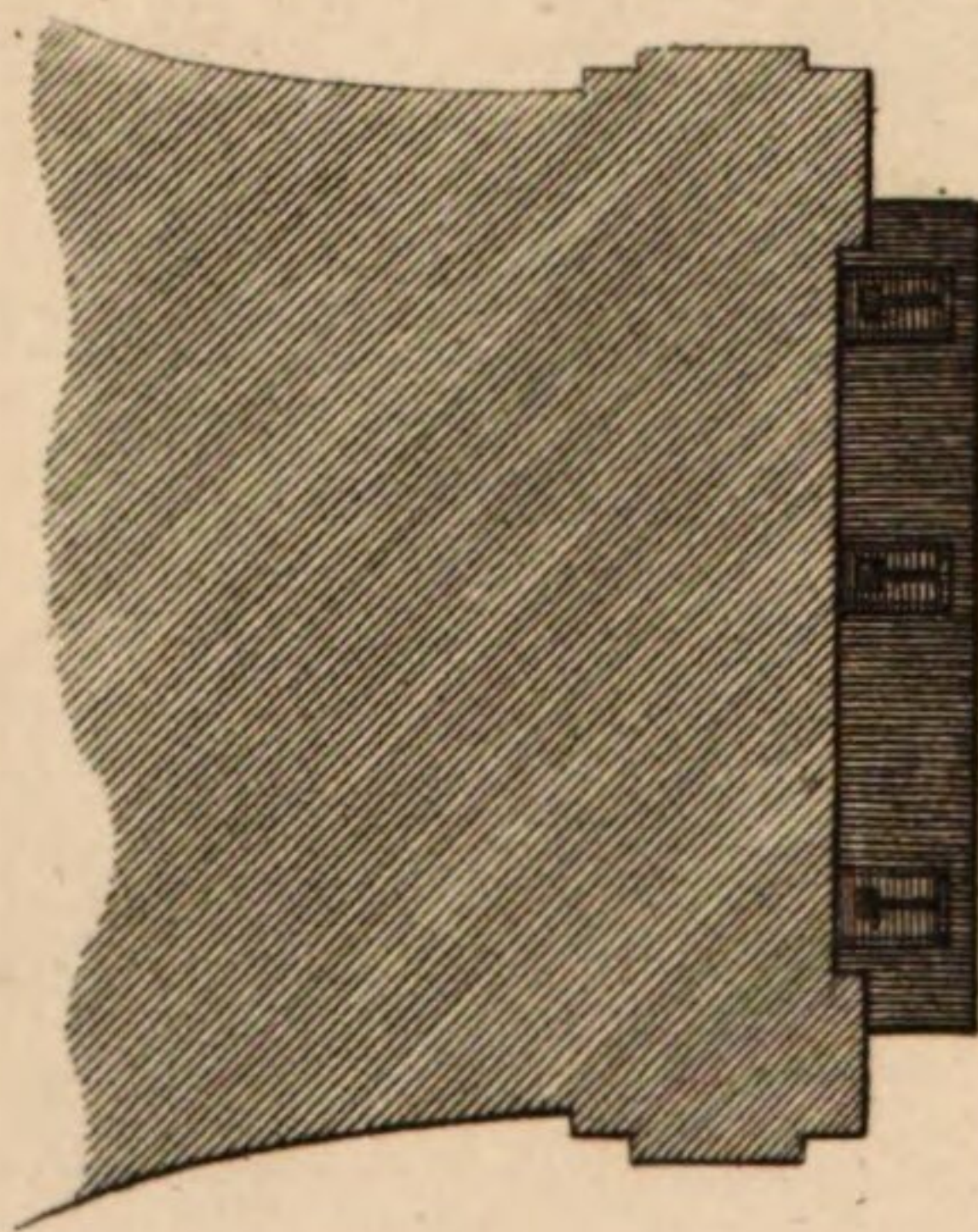
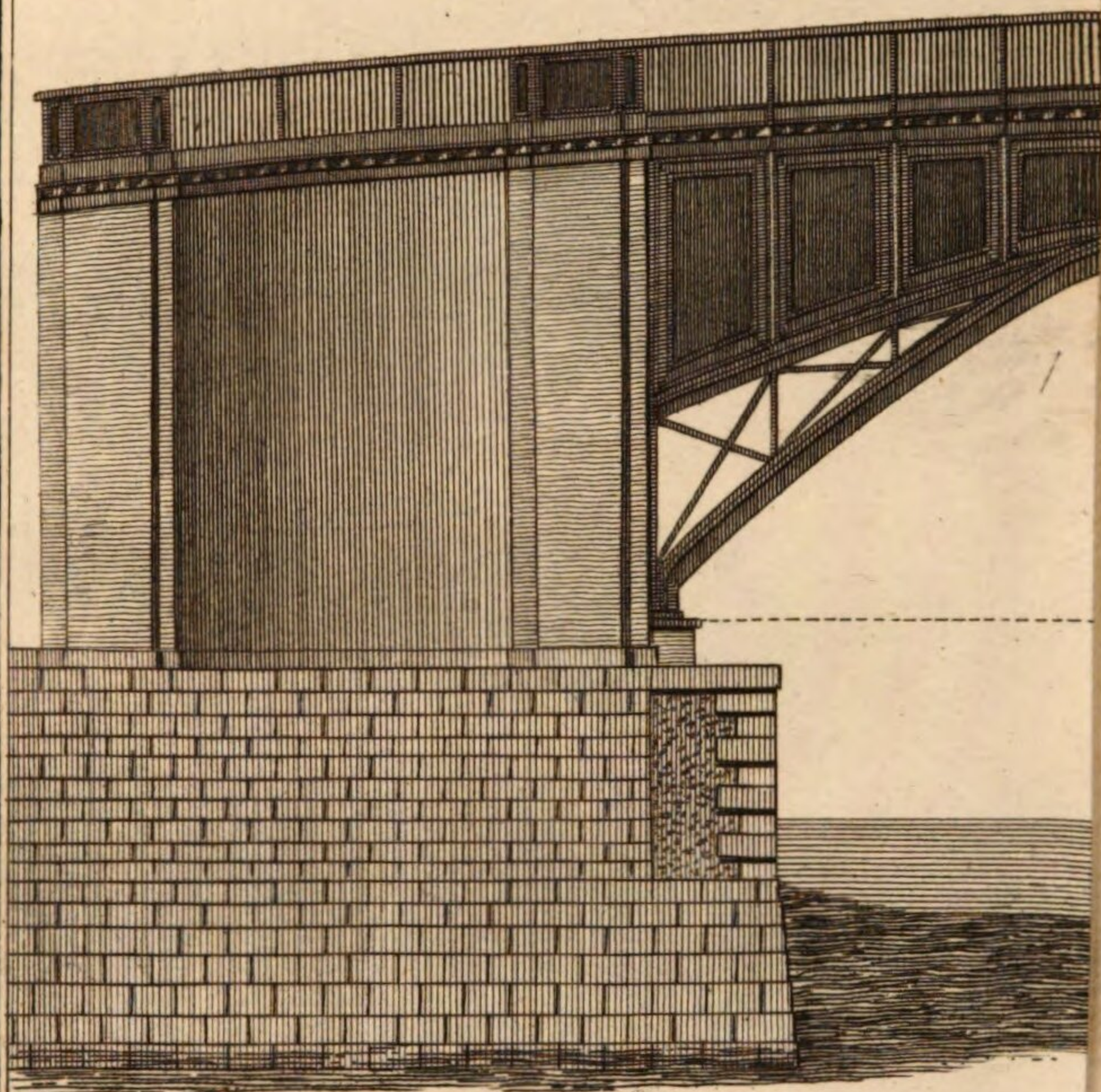
“ This great improvement upon a navigable river was first put in practice near Coalbrook-dale, where the river is narrow and rapid. The arch is 100 feet 6 inches in the span, and rises 45 feet. It was executed in the year 1777, by Mr. ABRAHAM DARBY, of Coalbrook-dale, and the iron-work is now quite as perfect as when it was at first put up. Drawings of this bridge have long been before the public, and have been much and justly admired.

“ About two miles farther up the river, at a place called Buildwas, there was formerly a stone bridge, consisting of narrow arches, which were a great obstruction to the navigation. This bridge was carried away by the high flood in 1795, and has been rebuilt of iron at the expense of the county, from a plan given by me, as county surveyor. It was executed in a masterly manner by the Coalbrook-dale Company, and finished in 1796. The span of the arch is 130 feet, and the rise is 24 feet: as the road-way could not with propriety be raised to a great height, advantage was taken of the Schauffhausen principle, by making the outer ribs rise to the top of the railing, and connecting them with the lower ribs by means of dove-tailed king-posts; this will best be seen by the drawing No. 4.

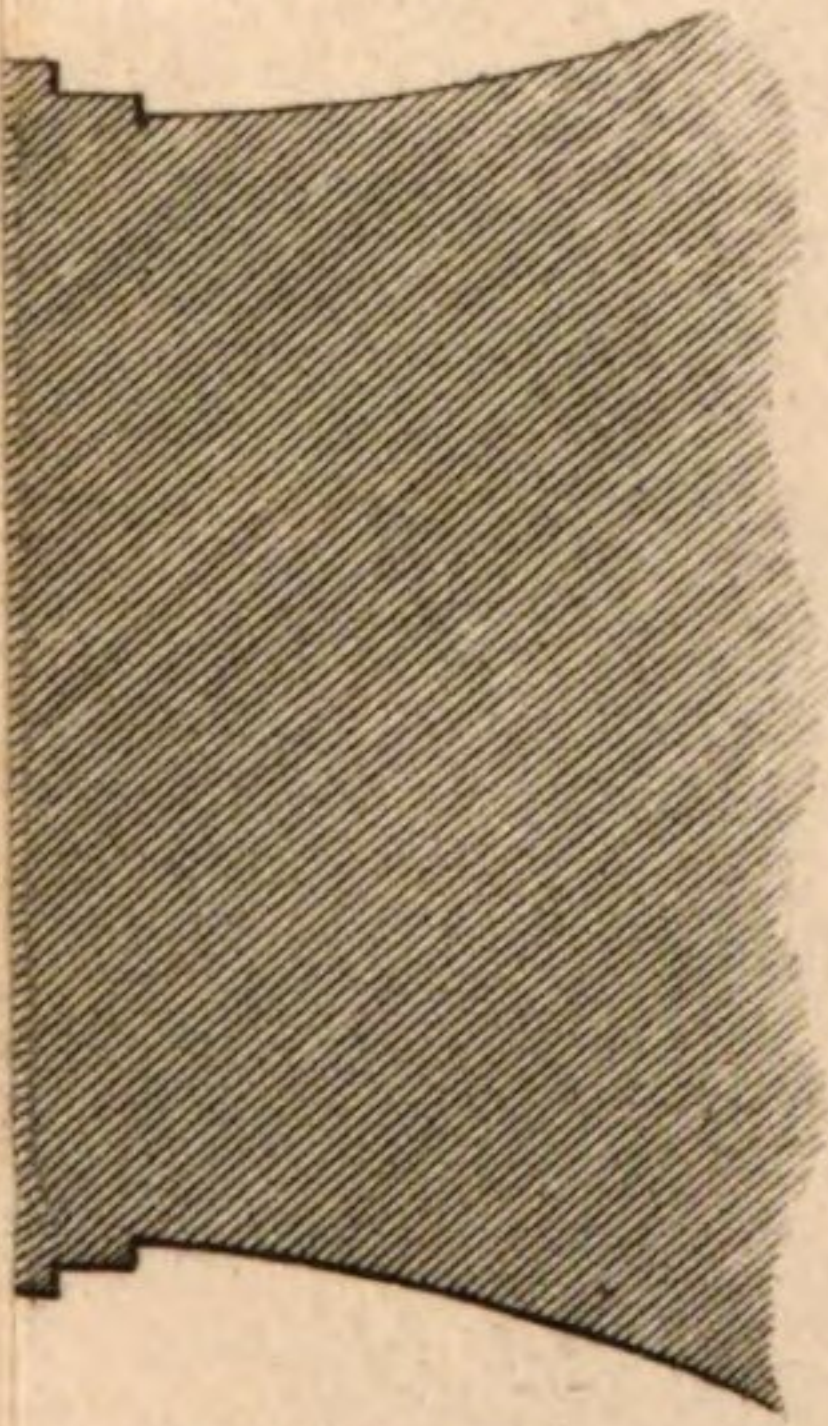
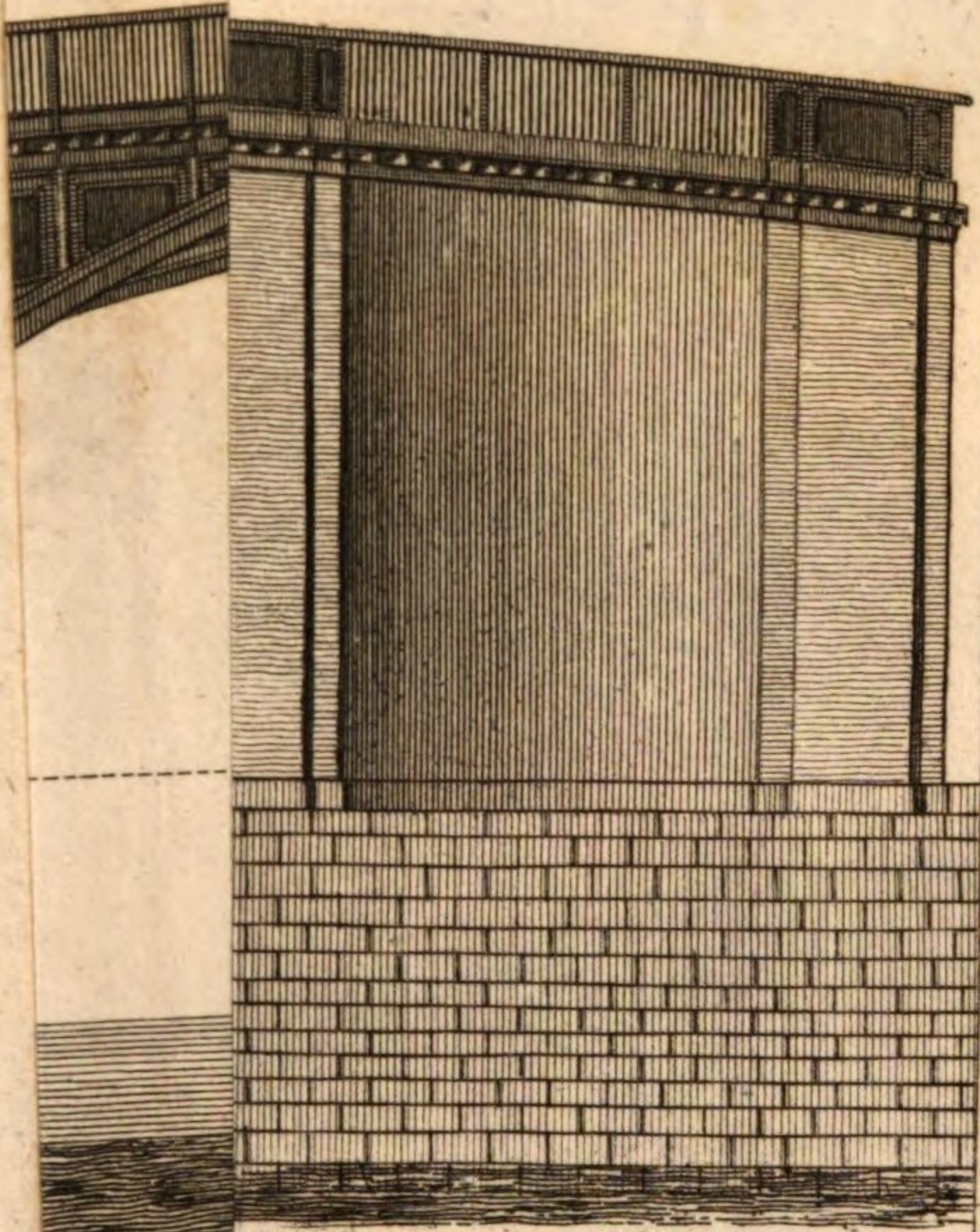
“ THOMAS TELFORD.

“ *Shrewsbury, 13th Nov. 1800.*”

N^o. 4.



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S. I. Needle sculp Strund.

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Jan. 1	—	{ 12 of { more }	7 0	Sunday	5 6	2 8	2 10	7 0	6 6	—	—	—
2	—	overflown	Sunday	8 0	6 0	2 9	2 6	6 0	5 0	—	—	—
3	—	Sunday	5 8	7 0	5 6	2 8	froz. over	6 6	4 6	—	—	—
4	—	12	4 6	6 0	3 0	2 10	Sunday	7 0	4 4	—	—	9 0
5	—	13	5 8	4 6	3 0	Sunday	froz. over	5 0	3 9	—	—	9 0
6	—	10	6 2	4 0	Sunday	2 2	2 0	5 0	3 0	—	—	9 0
7	—	7	6 8	3 8	3 6	2 2	2 2	4 6	2 9	—	—	5 0
8	—	5	7 6	Sunday	7 0	2 0	2 8	3 6	2 8	—	—	4 3
9	—	5	Sunday	3 0	bank full	2 0	2 6	3 0	2 7	—	—	5 0
10	—	Sunday	9 8	3 6	9 0	2 0	2 4	3 0	2 5	—	—	5 0
11	—	3	9 6	3 0	8 0	2 0	Sunday	3 0	2 4	—	—	5 0
12	—	3	10 0	2 6	10 0	Sunday	froz. over	3 2	2 4	—	—	2 0
13	—	4	9 6	1 8	Sunday	1 8	do.	3 9	2 3	—	—	7 0
14	—	4	9 0	1 8	8 6	1 8	do.	7 0	3 0	—	—	5 0
15	—	6	9 8	Sunday	8 0	1 1	do.	9 0	6 9	—	—	6 0
16	—	—	Sunday	4 0	6 0	2 6	do.	5 6	4 0	—	—	4 3
17	—	Sunday	8 6	6 0	4 6	2 4	do.	3 6	3 4	—	—	3 3
18	—	4	7 6	5 0	4 0	2 4	Sunday	3 3	2 10	7 0	4 0	4 0
19	—	3	7 0	4 0	3 6	Sunday	froz. over	3 8	2 6	6 6	6 9	4 0
20	—	3	8 8	3 0	Sunday	2 6	do.	3 3	2 8	5 0	3 9	4 0
21	—	3	8 6	3 0	3 0	—	do.	3 8	2 6	6 0	3 9	4 0
22	—	2 10	8 0	Sunday	3 0	2 2	do.	3 9	2 8	4 6	4 0	6 0

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Jan. 23	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
24	—	Sunday	Sunday	3 0	3 0	2 2	do.	4 0	2 9	4 4	4 10	5 0
25	—	4 4	8 6	3 4	3 0	3 4	do.	6 0	4 0	4 0	6 0	10 0
26	—	6 0	7 4	4 6	6 0	3 6	do.	9 0	5 6	8 6	5 6	12 0
27	—	6 6	5 10	7 0	0 0	Sunday	do.	10 0	4 0	6 8	4 0	out of bounds
28	—	7 6	4 4	8 0	3 6	3 6	do.	11 0	3 9	2 6	5 0	till
29	—	7 0	3 8	Sunday	6 6	3 10	do.	11 0	7 0	2 4	3 9	—
30	—	7 2	Sunday	6 6	4 6	5 0	do.	11 0	6 0	3 6	3 0	9 0
31	—	Sunday	4 6	5 6	5 0	5 0	do.	11 0	6 0	3 0	3 0	6 0
Feb. 1	—	5 8	4 0	4 6	4 6	overflow	froz. over	9 6	7 6	2 6	—	5 0
2	—	5 2	3 8	4 6	4 6	Sunday	do.	7 0	6 3	7 0	froze over	4 0
3	—	4 10	3 6	5 0	Sunday	overflow	do.	6 0	5 3	7 6	till	3 6
4	—	4 0	3 2	5 8	6 0	do.	do.	6 6	5 0	6 6	14th	6 6
5	—	3 2	2 8	Sunday	0 0	8 0	do.	9 6	4 0	5 9	—	3 6
6	—	3 0	Sunday	4 0	6 0	4 6	do.	10 6	3 9	4 10	—	3 6
7	—	2 0	2 8	4 0	0 0	4 6	do.	0 0	2 2	2 11	—	3 0
8	—	2 6	2 6	3 8	6 6	4 6	do.	0 0	2 4	3 5	—	3 0
9	—	2 2	2 4	3 9	7 6	Sunday	begins to thaw	11 0	4 4	3 3	—	2 9
10	—	2 4	3 0	3 6	Sunday	3 6	begins to rise	11 6	2 0	3 0	—	2 9

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
Feb. 11	—	2 7	2 6	3 0	8 0	3 6	{ above all marks	8 0	2 0	2 8	—	2 8
12	—	2 2	7 0	Sunday	7 0	3 6	do.	7 0	2 2	2 7	—	2 6
13	—	2 9	Sunday	3 0	7 6	3 6	{ above all marks	7 0	2 0	2 6	—	2 6
14	—	Sunday	7 2	2 8	6 0	5 0	do.	6 0	2 9	2 4	8 0	2 4
15	—	2 2	7 0	2 8	6 0	5 6	do.	5 0	2 8	2 10	10 0	2 3
16	—	2 6	6 10	2 6	4 6	Sunday	5 0	4 6	2 6	6 0	10 0	2 3
17	—	4 0	6 6	2 4	Sunday	8 0	5 0	3 8	2 4	6 0	12 0	2 2
18	—	3 10	6 0	2 3	3 6	8 0	5 2	3 8	2 6	5 0	9 6	2 2
19	—	3 2	5 4	Sunday	3 6	7 6	5 4	3 4	2 3	4 4	8 6	4 4
20	—	2 6	Sunday	2 2	3 0	6 0	5 0	3 0	2 2	2 7	12 0	3 3
21	—	Sunday	5 0	2 2	3 0	4 10	5 0	3 0	2 0	2 2	12 0	3 3
22	—	2 2	4 2	2 0	3 0	5 6	Sunday	3 0	2 0	2 4	10 0	2 2
23	—	2 0	4 0	2 1	3 0	8 0	4 8	2 10	0 23	3 3	9 0	3 0
24	—	2 0	7 0	2 0	Sunday	8 0	—	2 10	0 22	4 6	9 0	3 0
25	—	2 0	6 0	2 4	4 6	8 0	—	2 6	0 22	7 0	7 6	2 2
26	—	2 2	5 5	Sunday	5 0	8 0	3 10	2 4	0 20	8 0	5 0	2 2
27	—	2 4	Sunday	5 6	5 0	9 0	3 10	2 4	0 20	9 0	6 0	2 2
28	—	Sunday	3 8	4 0	5 0	9 0	3 6	2 3	0 21	8 0	7 6	2 2
29	—	—	—	—	—	—	—	2 2	—	—	—	—
Mar. 1	—	2 4	3 2	3 0	5 0	7 6	Sunday	2 0	0 20	4 0	7 0	2 6
2	—	2 2	2 10	3 3	6 6	Sunday	3 0	2 0	0 22	3 0	6 6	2 3

Mar.	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
3	—	2 0	2 6	2 10	Sunday	5 8	3 0	2 0	0 22	2 4	5 6	2 5
4	—	2 0	2 6	Sunday	7 6	5 6	4 8	2 0	0 21	2 2	4 0	2 5
5	—	2 0	2 10	4 6	5 6	4 8	4 10	2 2	0 20	2 4	2 8	2 5
6	—	1 9	Sunday	4 6	6 0	4 0	5 6	2 0	0 20	4 4	2 6	2 3
7	—	Sunday	2 8	3 9	6 0	4 0	7 0	2 0	0 20	4 0	2 4	2 1
8	—	1 7	2 6	3 10	5 0	3 9	Sunday	2 0	0 23	3 9	2 4	2 0
9	—	1 6	2 6	3 1	4 0	Sunday	4 8	0 23	0 22	3 7	2 4	2 0
10	—	1 8	2 0	3 8	Sunday	2 10	4 8	0 22	0 22	2 10	2 4	2 0
11	—	1 8	1 11	Sunday	3 0	3 3	6 6	0 22	0 21	2 6	2 5	2 3
12	—	1 8	1 10	2 5	3 3	5 0	7 0	0 22	0 22	2 5	2 6	4 0
13	—	1 10	Sunday	2 4	3 0	4 0	6 6	0 23	0 20	2 6	2 6	out of bounds
14	—	Sunday	1 10	2 4	4 6	4 3	5 10	0 23	0 21	2 4	2 6	—
15	—	1 9	1 10	3 9	4 6	5 0	4 10	0 23	0 20	2 2	2 5	5 6
16	—	1 9	1 9	3 6	Sunday	Sunday	5 0	2 5	0 19	3 4	2 6	4 6
17	—	1 9	1 8	3 0	5 6	9 0	3 0	2 0	0 18	2 10	2 8	4 0
18	—	1 8	1 7	Sunday	8 6	9 0	4 6	0 23	0 17	2 8	2 3	3 0
19	—	1 8	1 6	3 0	6 6	9 0	3 6	0 22	0 17	2 10	2 4	3 0
20	—	1 6	Sunday	2 9	6 6	5 6	Sunday	0 21	0 18	2 6	2 6	2 8
21	—	Sunday	2 4	2 6	5 6	5 6	5 6	0 22	0 18	2 4	2 7	2 6
22	—	1 8	2 6	2 9	4 6	5 0	5 6	0 22	0 18	2 3	2 5	2 6
23	—	1 6	2 9	2 6	Sunday	Sunday	5 0	0 21	0 18	2 2	2 5	2 5
24	—	1 7	2 4	2 6	3 6	3 0	4 8	0 21	0 17	2 2	2 6	2 4
25	—	1 6	2 0	Sunday	2 6	3 0	3 8	0 21	0 17	2 1	2 6	2 4

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Mar. 26	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
27	—	1 6	2 0	6 0	3 3	2 8	4 6	0 21	2 2	2 0	2 5	2 2
28	—	1 8	Sunday	5 6	3 0	2 8	4 0	0 21	2 10	2 0	3 0	2 4
29	—	Sunday	2 0	5 6	3 0	2 8	3 6	0 20	2 6	2 0	2 6	2 2
30	—	1 8	2 0	4 6	2 8	2 4	Sunday	0 20	2 10	2 3	2 6	2 3
31	—	1 6	1 9	4 0	Sunday	Sunday	2 10	0 21	2 4	2 2	2 2	3 0
April 1	—	5	1 7	Sunday	2 8	2 4	2 10	1 10	2 3	2 2	3 1	2 0
2	—	4 $\frac{1}{2}$	1 6	7 0	4 0	3 4	2 10	2 4	2 2	2 3	2 1	3 3
3	—	4 $\frac{1}{2}$	Sunday	5 6	5 6	4 0	2 10	2 6	2 1	2 1	2 2	2 2
4	—	4 $\frac{1}{2}$	2 2	6 0	6 0	7 0	2 7	2 0	3 3	2 10	2 1	2 2
5	—	4 $\frac{1}{2}$	2 0	overflow	5 0	10 0	Sunday	0 23	4 4	2 8	3 3	2 3
6	—	4	2 0	do.	3 6	Sunday	2 6	0 23	3 4	2 5	2 10	2 4
7	—	1 1	2 0	7 6	Sunday	10 0	2 6	0 22	2 3	2 6	2 3	2 4
8	—	1 1	1 10	Sunday	2 9	10 0	2 6	0 21	2 8	2 4	2 2	2 3
9	—	4	1 10	4 0	2 9	10 0	2 8	0 21	2 4	2 2	2 2	2 3
10	—	1 1	1 10	3 6	2 7	10 0	2 4	0 21	2 4	2 2	2 2	2 3
11	—	Sunday	Sunday	3 0	2 6	10 0	Sunday	0 18	2 4	2 0	2 2	2 3
12	—	1 3	3 6	7 7	2 4	8 0	2 4	0 18	2 4	2 0	2 2	2 3
13	—	1 4	2 5	2 4	2 4	5 0	2 4	0 18	2 4	2 0	2 2	2 3
14	—	1 4	1 11	2 2	2 4	4 0	2 4	0 20	2 4	2 0	2 2	2 3
15	—	4 $\frac{1}{2}$	3 2	Sunday	Sunday	3 3	2 3	0 20	2 3	2 0	2 2	2 3
16	—	6 $\frac{1}{2}$	2 6	2 0	2 0	3 0	2 1	0 20	2 7	2 21	2 4	2 6

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
Apr. 17	—	1 7	Sunday	2 2	2 6	3 0	2 1	0 18	2 5	0 20	3 3	5 8
18	—	Sunday	2 0	3 6	2 6	2 8	2 1	0 15	2 4	0 20	4 6	5 0
19	—	1 6	2 2	overflown	3 6	2 8	Sunday	0 16	2 3	0 19	4 4	4 0
20	—	1 4½	2 2	do.	3 6	2 8	2 3	0 16	2 2	0 19	3 3	3 6
21	—	1 4	3 9	do.	Sunday	2 6	2 7	0 16	2 2	0 19	3 4	3 0
22	—	1 4	2 10	Sunday	3 10	2 6	2 8	0 17	2 3	0 18	3 3	3 0
23	—	1 3	3 0	3 6	2 6	2 4	2 6	0 16	2 3	0 18	3 4	3 0
24	—	1 4	Sunday	3 0	2 2	2 2	2 8	0 16	2 2	0 17	3 3	3 9
25	—	Sunday	3 5	3 0	2 9	1 10	2 8	0 16	2 2	0 18	3 3	3 9
26	—	1 6	2 11	2 10	3 0	1 8	Sunday	0 15	2 2	0 17	3 3	3 6
27	—	1 6	2 6	2 9	4 6	Sunday	5 7	0 15	5 0	0 17	3 6	4 0
28	—	1 10	2 6	3 4	Sunday	1 8	7 8	0 15	4 9	0 17	3 3	4 0
29	—	1 8	2 6	Sunday	2 0	1 8	8 0	0 15	4 0	0 16	3 3	3 10
30	—	1 8	2 6	2 8	2 0	1 11	7 0	0 14	3 0	0 20	2 6	5 6
May 1	—	1 7	Sunday	3 8	2 6	2 0	5 10	1 2	2 6	0 19	2 6	4 6
2	—	Sunday	2 4	3 7	3 0	2 4	5 6	0 14	2 9	0 19	2 7	4 0
3	—	3 4	2 2	2 6	2 9	2 4	Sunday	0 18	3 0	0 18	2 7	4 0
4	—	2 8	2 2	2 6	2 3	Sunday	2 9	0 19	3 6	0 18	2 4	4 0
5	—	2 0	1 10	2 10	Sunday	1 8	2 9	0 19	7 6	0 17	2 2	5 6
6	—	1 10	2 2	Sunday	2 2	1 8	2 9	0 17	7 9	2 1	2 1	4 4
7	—	2 0	1 8	2 2	2 2	1 10	2 9	0 18	6 0	2 0	2 0	4 6

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
May	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
8	—	2 6	Sunday 8	2 0	2 0	1 10	2 8	0 22	5 10	0 23	2 10	3 0
9	—	Sunday 6	1 6	1 10	2 0	5 4	2 8	0 23	4 0	0 22	3 0	0 0
10	—	2 6	1 6	1 10	2 0	3 4	Sunday 6	4 1	3 6	0 20	2 6	3 0
11	—	2 1	1 7	1 8	2 0	Sunday 4	2 6	3 6	3 3	0 20	3 3	2 0
12	—	2 0	1 6	1 8	1 8	3 4	2 6	2 10	3 6	0 22	2 10	2 0
13	—	2 0	1 6	1 11	Sunday 8	3 0	2 4	3 3	3 9	0 20	2 4	2 0
14	—	1 10	1 8	1 11	1 10	2 4	2 4	3 6	3 9	0 18	2 4	2 0
15	—	1 7	Sunday 9	2 3	1 10	2 4	2 4	3 6	3 9	0 18	2 4	2 0
16	—	Sunday 5	1 9	2 6	1 8	1 6	Sunday 0	3 3	3 3	0 19	2 4	2 0
17	—	1 5	1 9	3 0	1 6	—	2 0	3 3	4 4	0 17	2 5	3 0
18	—	1 7	1 7	3 6	1 6	1 6	2 0	3 3	4 4	0 17	2 5	3 0
19	—	1 6	1 10	4 2	Sunday 2	1 6	2 10	4 4	4 4	0 17	2 5	3 0
20	—	1 6	1 8	4 2	1 4	6	2 10	4 4	4 4	0 17	2 5	3 0
21	—	1 6	2 4	5 0	1 4	6	2 9	4 4	4 4	0 21	2 5	3 0
22	—	1 6	1 4	5 0	1 4	6	2 9	4 4	4 4	0 19	2 5	3 0
23	—	Sunday 6	1 8	4 10	1 4	6	2 9	4 4	4 4	0 18	2 5	3 0
24	—	1 7	Sunday 4	2 10	1 4	8	2 8	4 4	4 4	0 18	2 5	3 0
25	—	1 9	2 8	2 9	1 4	Sunday 9	2 8	4 4	4 4	0 18	2 5	3 0
26	—	2 4	1 10	2 9	Sunday 4	1 11	2 8	4 4	4 4	0 17	2 5	3 0
27	—	2 6	1 8	Sunday 6	1 4	1 8	2 3	4 4	4 4	0 16	2 5	3 0
28	—	4 2	1 6	2 4	1 4	1 8	2 3	4 4	4 4	0 16	2 5	3 0
29	—	3 10	0 0	3 4	1 4	1 8	2 3	4 4	4 4	0 26	2 5	3 0

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
May 30	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
31	—	Sunday 3 0	1 4	6 6	1 4	1 8	Sunday 1 0	0 21	2 5	0 18	1 10	2 2
June 1	—	3 2	2 2	6 6	1 4	Sunday 1 6	1 0	4 1	3 6	6 6	1 10	2 4
2	—	2 6	1 1	5 10	Sunday 1 4	1 6	1 0	2 10	4 4	1 17	0 22	2 2
3	—	2 4	1 1	Sunday 0	1 4	1 6	1 0	2 6	4 6	0 17	0 21	2 2
4	—	2 3	1 1	3 10	1 4	1 6	1 0	2 3	6 6	0 16	2 1	2 2
5	—	2 0	1 1	2 10	1 4	1 5	1 2	2 2	0 6	0 16	4 6	2 2
6	—	Sunday 1 10	1 1	2 8	1 4	1 6	1 2	2 2	3 4	0 17	6 0	2 2
7	—	1 10	1 1	2 10	1 4	1 7	Sunday 1 2	0 21	4 4	0 17	3 6	1 10
8	—	2 2	1 1	3 3	1 4	Sunday 6	1 3	0 20	10 4	0 16	2 8	1 1
9	—	2 0	1 1	2 4	Sunday 1 4	1 6	1 4	0 19	6 6	0 15	2 6	1 1
10	—	3 0	1 1	Sunday 4	1 4	1 5	1 2	0 19	2 5	0 15	2 4	1 1
11	—	2 10	1 1	—	1 4	1 3	1 1	0 18	2 4	0 15	2 2	1 1
12	—	2 4	Sunday 0	—	1 4	1 3	1 1	0 18	2 4	0 15	2 2	1 1
13	—	Sunday 2	1 1	—	1 4	1 2	Sunday 7	0 21	2 3	0 16	1 11	1 1
14	—	2 2	1 1	—	1 4	1 2	1 4	0 23	2 2	0 15	0 22	1 1
15	—	1 9	1 1	—	1 4	Sunday 4	1 4	0 22	2 2	0 14	0 21	1 1
16	—	1 7	1 1	—	Sunday 4	1 4	1 4	0 21	3 6	0 14	0 21	1 1
17	—	1 6	1 4	Sunday 6	1 4	1 4	1 4	0 21	4 4	0 13	0 21	1 1
18	—	1 11	2 6	1 6	1 4	1 4	1 4	0 23	5 3	0 12	0 18	1 1
19	—	1 11	Sunday 1	1 6	1 4	1 3	1 4	3 3	6 3	0 12	0 20	1 1

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
June 20	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
21	—	Sunday 6	1 3	1 7	1 4	1 3	1 4	0 23	2 9	0 13	0 19	1 6
22	—	2 0	1 4	1 8	1 4	1 3	Sunday 4	0 20	6 6	0 16	0 19	1 7
23	—	1 10	1 3	1 6	1 4	Sunday 3	1 4	0 21	5 9	0 15	0 16	1 8
24	—	1 10	1 2	1 10	Sunday 2	1 3	1 4	0 20	5 6	0 16	0 19	1 6
25	—	1 10	1 1	1 0	1 2	1 3	1 4	0 19	5 6	0 17	0 17	1 6
26	—	1 10	Sunday 0	1 0	1 2	1 2	1 5	0 18	4 0	0 16	0 19	1 6
27	—	Sunday 0	1 0	1 2	1 2	1 0	1 7	0 17	3 7	0 17	0 17	1 6
28	—	2 0	1 0	2 3	1 2	1 0	Sunday 9	0 18	5 5	0 16	0 17	1 6
29	—	3 1	1 0	2 3	1 2	Sunday 0	1 7	0 17	5 6	0 15	0 17	1 6
30	—	1 7	—	3 2	Sunday 2	1 0	1 7	0 17	4 0	0 15	0 17	1 6
July 1	—	6	—	—	1 8	1 3	1 9	1 5	7 6	1 4	1 6	6
2	—	2 2	Sunday	—	1 5	1 3	1 9	1 6	6 6	0 16	0 16	7
3	—	2 1	—	1 4	1 4	1 2	1 0	0 17	5 6	0 20	0 16	6
4	—	Sunday 8	—	1 1	1 4	1 1	2 7	0 16	5 5	0 18	0 17	6
5	—	1 8	—	2 0	1 4	1 2	Sunday 2	0 15	5 6	0 16	0 17	6
6	—	2 0	—	2 0	2 0	Sunday 4	2 0	0 16	5 5	2 2	0 16	6
7	—	2 6	—	1 1	Sunday 4	1 7	1 10	0 16	4 0	0 22	0 17	5
8	—	2 0	—	Sunday 6	1 4	1 5	1 10	0 17	3 3	0 20	0 17	5
9	—	1 10	1 3	1 6	1 4	1 1	1 7	0 17	3 4	0 19	0 20	5
10	—	2 8	Sunday	1 6	1 2	1 1	1 7	0 18	3 3	0 19	0 20	5

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
July 11	—	ft. in. Sunday	ft. in. 1 3 8	ft. in. 1 6 7	ft. in. 1 2 2	ft. in. 1 0 0	ft. in. 1 6 6	ft. in. 0 18 0	ft. in. 3 0 0	ft. in. 0 19 0	ft. in. 0 20 0	ft. in. 1 1 5
12	—	1 10	2	1 7	1 2	1 0	Sunday	0 17	3 1	0 20	0 19	1 5
13	—	2 2	—	1 11	1 2	Sunday	1 6	0 18	3 0	0 18	0 19	1 4
14	—	2 2	—	2 8	Sunday	0 11	1 6	0 20	2 10	0 22	2 4	1 3
15	—	2 0	—	Sunday	1 2	0 11	1 4	0 22	2 8	0 19	2 4	1 3
16	—	1 1	—	1 11	1 2	1 2	1 4	0 22	2 8	0 23	2 4	1 2
17	—	1 10	Sunday	1 9	1 2	1 0	1 4	0 21	2 7	2 1	0 20	1 3
18	—	Sunday	1 2	2 10	1 1	1 2	1 4	0 23	2 5	2 8	2 2	1 3
19	—	1 7	2 6	2 4	1 1	1 0	Sunday	2 0	2 7	2 2	2 2	1 3
20	—	1 1	4 6	2 0	1 1	Sunday	1 4	2 2	2 5	2 5	5 6	1 3
21	—	3 2	2 0	2 3	Sunday	1 0	1 4	2 6	2 2	3 8	2 4	1 2
22	—	2 5	2 0	Sunday	1 0	1 2	1 4	2 4	2 2	3 8	2 2	1 1
23	—	2 1	1 10	2 2	1 0	1 2	1 4	2 0	2 2	3 6	2 2	1 1
24	—	2 6	Sunday	2 0	1 0	1 1	Sunday	2 2	2 0	2 2	2 2	1 1
25	—	Sunday	1 10	1 10	1 0	1 1	1 8	2 4	2 3	3 3	2 2	1 1
26	—	2 0	2 10	2 1	1 0	1 1	Sunday	2 0	2 2	3 6	2 2	1 1
27	—	1 9	2 9	4 0	1 0	Sunday	1 8	2 3	2 2	2 2	2 2	1 1
28	—	1 9	1 6 $\frac{1}{2}$	2 10	Sunday	1 1	1 8	2 6	0 21	2 6	2 2	1 1
29	—	1 9	1 8	Sunday	1 2	1 1	2 10	2 8	0 20	2 6	2 2	1 1
30	—	1 7	2 6	3 0	1 2	1 5	2 8	3 9	0 19	2 4	2 2	1 1
31	—	1 8	Sunday	3 0	1 2	1 3	4	2 8	0 18	2 2	2 2	1 1
Aug. 1	—	Sunday	2 4	3 8	1 2	1 11	3 0	2 6	2 7	2 8	2 6	1 2
2	—	2 0	2 4	2 8	1 0	1 10	Sunday	2 0	2 7	2 8	2 6	1 2

Aug.	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	18
3	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
4	—	2 3	2 0	2 9	1 0	Sunday	3 9	3 0	3 5	3 0	2 2	1 1
5	—	2 6	1 8	2 8	Sunday	2 0	3 9	2 9	4 9	3 0	4 0	1 0
6	—	2 8	1 6	Sunday	2 2	1 7	3 0	2 6	3 3	6 3	3 6	0 9
7	—	2 2	1 6	2 9	1 8	1 8	2 8	2 8	2 7	3 9	5 6	0 1
8	—	5 6	Sunday	0	2 6	1 8	2 4	2 8	2 8	2 0	6 1	1 0
9	—	Sunday	1 6	1 11	2 1	1 8	Sunday	2 3	2 7	2 4	4 4	0 1
10	—	3 0	1 4	1 10	1 6	1	7	0 18	2 10	2 4	6 0	0 11
11	—	2 6	1 6	1 8	3 6	Sunday	2 3	0 17	3 3	3 6	5 0	1 0
12	—	2 2	1 4	1 8	Sunday	1 2	2 3	0 18	5 0	3 0	0 6	1 0
13	—	2 0	1 4	Sunday	3 4	1 1	2 1	0 18	5 0	5 6	3 6	0 0
14	—	1 8	1 3	1 4	—	1 4	10	0 17	3 3	3 9	2 8	0 11
15	—	Sunday	Sunday	4	—	1 3	6	0 16	2 6	2 6	2 6	0 9
16	—	1 8	1 6	1 4	—	1 3	1	0 16	2 4	2 0	0 0	0 0
17	—	1 6	1 6	1 5	Sunday	Sunday	6	0 16	2 4	2 1	10 0	0 11
18	—	1 6	1 8	1 6	4 6	1 3	6	0 16	2 2	2 4	11 0	0 11
19	—	1 6	1 6	Sunday	2 10	1 3	1 6	0 16	2 6	2 1	11 0	0 11
20	—	1 6	1 8	1 7	2 3	1 3	8	0 15	2 2	2 1	10 0	1 0
21	—	1 4	Sunday	6	2 2	1 3	2	0 15	3 7	0 21	6 6	1 1
22	—	Sunday	7	0	2 6	1 3	Sunday	0 15	2 9	0 20	4 4	1 1
23	—	1 4	1 6	0	3 6	1 3	—	0 15	2 7	0 20	4 4	1 1
24	—	2 10	1 6	9	5 6	Sunday	2	0 14	2 7	0 18	3 8	1 3
25	—	2 2	1 7	0	Sunday	1 2	2					

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Aug. 26	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
27	—	2 0	1 6	Sunday	2 4	1 2	2 2	0 14	3 9	0 18	3 1	1 3
28	—	1 10	2 1	7 6	2 2	1 8	1 7	0 15	3 0	0 18	2 8	1 3
29	—	1 7	Sunday	8 0	2 0	1 8	1 6	0 17	2 9	0 17	2 4	1 4
30	—	Sunday	2 6	6 6	1 10	1 2	1 1	0 16	2 8	0 17	2 2	1 4
31	—	2 0	2 8	5 0	1 8	1 8	1 6	0 16	2 6	0 17	2 6	1 2
	—	1 6	2 0	4 2	3 2	Sunday	Sunday	0 16	2 10	0 17	5 3	1 5
Sept. 1	—	1 8	4 0	4 0	Sunday	6 6	1 5	0 15	2 8	0 17	5 2	1 3
2	—	3 6	6 2	Sunday	4 0	2 4	1 5	0 14	2 10	0 18	4 0	1 3
3	—	2 4	4 2	4 8	3 6	2 6	1 4	0 14	4 0	0 17	2 6	1 3
4	—	3 8	Sunday	4 0	5 6	2 2	1 4	0 15	3 0	0 18	2 4	1 2
5	—	Sunday	6 6	4 2	3 3	2 0	1 4	0 13	2 6	0 19	2 1	1 2
6	—	2 4	5 2	3 6	2 10	2 4	1 4	0 12	2 5	2 6	2 2	1 4
7	—	2 6	3 6	3 3	2 3	3 4	1 1	0 11	2 0	2 6	2 2	1 4
8	—	1 10	3 10	2 3	2 6	Sunday	Sunday	0 11	3 0	2 2	2 0	1 3
9	—	1 10	2 8	2 10	Sunday	4 4	1 3	0 13	2 8	1 10	2 1	1 4
10	—	1 10	2 2	Sunday	2 2	2 6	2 8	0 20	2 5	0 20	2 0	1 6
11	—	2 0	Sunday	2 8	2 0	2 6	2 2	0 18	3 6	0 20	1 11	1 4
12	—	Sunday	2 2	3 6	1 9	2 2	2 0	0 16	3 0	3 10	1 10	1 5
13	—	1 9	2 0	3 3	1 9	2 2	2 0	0 16	3 3	3 3	1 9	1 3
14	—	2 8	1 9	4 6	1 6	Sunday	Sunday	0 18	5 6	4 2	2 0	1 4
15	—	2 10	1 9	8 0	1 8	1 7	1 4	0 20	5 9	6 0	1 10	1 6
16	—	3 8	1 9	Sunday	Sunday	1 8	1 4	0 20	5 0	4 6	1 9	1 4

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Sept. 17	—	2 10	1 9	4 6	—	2 6	1 4	2 0	4 0	2 10	1 10	1 3
18	—	2 2	Sunday	3 10	1 10	2 10	1 4	0 22	7 0	2 6	3 0	1 4
19	—	Sunday	1 9	4 0	3 0	2 10	1 4	0 18	4 6	2 4	4 0	1 4
20	—	2 6	1 1	6 0	1 10	3 0	Sunday	0 20	4 9	2 2	6 0	1 1
21	—	2 8	1 1	7 0	1 10	Sunday	1 3	0 21	6 0	2 0	9 0	1 1
22	—	4 2	1 5	0 0	Sunday	5 0	1 3	0 17	5 8	2 0	9 0	1 1
23	—	4 2	1 4	7 0	8 9	4 6	1 2	0 21	4 2	2 0	9 0	1 2
24	—	7 0	Sunday	Sunday	9 9	4 6	1 2	0 19	3 0	2 2	9 0	1 2
25	—	4 4	1 3	5 6	1 7	3 8	1 2	0 18	3 3	2 2	8 0	1 2
26	—	Sunday	1 3	6 0	1 7	3 0	Sunday	0 17	2 10	2 2	7 4	5 5
27	—	2 8	1 3	5 0	1 6	3 0	1 2	0 17	2 6	2 2	4 4	3 3
28	—	2 2	1 3	6 0	1 5	Sunday	1 2	0 19	2 7	2 2	4 4	3 3
29	—	2 0	1 1	6 0	Sunday	2 11	1 2	0 18	2 2	2 2	4 4	3 4
30	—	1 10	1 3	Sunday	5 5	2 11	1 2	0 18	7 7	3 7	6 0	4 0
Oct. 1	—	9 9	2 2	0 0	5 5	5 5	2 2	5 5	4 8	2 10	6 6	4 0
2	—	1 1	Sunday	8 0	6 6	2 5	2 2	1 17	2 2	2 5	3 3	5 0
3	—	Sunday	1 1	7 6	0 0	2 5	2 2	0 16	3 6	2 7	0 0	5 10
4	—	1 10	1 1	4 6	8 8	2 0	2 2	0 15	5 9	2 4	6 0	4 4
5	—	1 8	1 2	4 0	6 6	Sunday	1 1	0 16	2 4	2 2	5 5	4 4
6	—	1 1	2 6	3 6	Sunday	3 0	2 2	0 16	2 2	2 2	4 4	4 4
7	6 0	1 1	0 0	Sunday	1 1	6 0	2 2	0 16	2 2	2 1	6 6	3 6
8	6 3	1 6	1 10	2 9	2 1	5 6	0 15	0 19	2 0	2 0	6 6	4 6

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Oct. 9	ft. in. 6 full	ft. in. 1 7	ft. in. Sunday 8	ft. in. 2 6	ft. in. 2 0	ft. in. 6 9	ft. in. 0 15	ft. in. 0 18	ft. in. 2 2	ft. in. 2 0	ft. in. 8 6	ft. in. 5 6
10	do.	Sunday	3 10	2 6	1 10	5 11	0 16	3 6	2 8	0 0	10 0	6 0
11		1 5	3 8	2 6	1 8	5 2	2 4	2 6	2 4	2 0	8 0	8 0
12	7 6	1 6	3 6	2 6	1 10	Sunday 6	3 0	3 2	2 2	3 0	6 0	7 6
13	7 6	1 6	3 0	2 8	Sunday 8	Sunday 6	2 0	3 6	2 0	2 6	5 0	6 6
14	7 10	3 4	3 6	Sunday	1 8	3 8	2 9	3 1	0 22	2 2	4 4	10 4
15	7 0	2 4	3 0	6 0	2 3	5 8	2 6	2 10	0 21	2 0	4 0	0 3
16	6 6	2 2	Sunday	6 0	1 10	5 2	7 0	2 9	2 0	2 4	3 6	3 8
17	6 6	Sunday	3 4	6 0	1 8	4 2	6 9	0 22	2 1	2 9	3 7	2 9
18	—	1 10	3 0	7 0	2 0	5 2	6 9	0 22	2 6	3 9	4 4	2 2
19	6 0	3 0	4 2	7 0	1 8	Sunday 2	4 4	0 21	4 0	3 6	4 4	2 2
20	6 0	2 6	4 0	6 6	Sunday 5	5 0	4 4	0 20	3 9	3 6	4 4	2 2
21	6 6	2 0	5 6	Sunday	1 5	4 4	5 0	2 3	3 0	3 10	6 0	2 2
22	5 6	1 9	6 8	7 0	1 6	4 0	5 0	2 5	2 6	5 10	6 0	11 4
23	5 2	2 6	Sunday	6 0	1 5	6 6	7 0	2 3	6 9	6 10	7 6	2 2
24	5 0	Sunday	4 6	5 0	1 4	6 6	7 0	2 2	4 4	4 0	4 4	6 4
25	Sunday	7 0	4 4	4 4	1 1	Sunday 8	7 4	2 0	4 4	4 6	3 3	2 2
26	3 4	6 6	4 0	3 4	1 6	3 0	6 4	0 22	3 6	5 6	3 3	2 2
27	3 4	3 8	3 10	3 9	Sunday 6	4 0	6 4	0 21	3 3	6 0	3 3	2 2
28	3 4	3 0	—	Sunday	4 6	4 0	6 6	0 20	3 3	6 0	3 3	2 2
29	3 2	2 6	2 10	4 10	3 6	4 9	7 6	0 21	2 10	5 6	3 3	2 2
30	3 3	2 4	Sunday	5 0	5 0	4 8	8 6	0 21	2 7	4 4	3 3	2 10
31	3 6	Sunday	2 4	5 0	3 2	4 10	9 0	0 20	2 7	0 6	3 3	4 4

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Nov. 1	ft. in. Sunday	ft. in. 2 2	ft. in. 2 0	ft. in. 7 0	ft. in. 4 4	ft. in. 3 10	ft. in. 10 0	ft. in. 0 20	ft. in. 2 6	ft. in. 6 0	ft. in. 3 0	ft. in. 3 0
2	2 9	2 8	2 1	7 0	3 0	Sunday	9 0	0 20	2 4	7 0	4 6	4 0
3	3 0	6 6	2 0	0	Sunday	4 6	6 0	6 8	2 7	7 7	5 6	3 6
4	3 6	6 0	2 0	Sunday	5 0	5 0	5 0	3 9	2 10	8 0	4 0	3 6
5	3 0	5 0	2 0	5 8	5 4	7 6	4 2	3 9	3 8	8 6	4 4	5 0
6	3 6	4 6	Sunday	4 0	3 10	8 10	5 0	3 6	2 2	9 0	9 0	7 7
7	7 0	Sunday	Sunday	3 8	3 4	6 4	7 6	4 7	2 3	9 9	10 0	7 7
8	Sunday	5 6	1 9	3 6	3 0	Sunday	5 6	2 7	2 3	9 9	11 0	7 7
9	—	5 2	1 9	3 0	3 6	6 4	4 0	2 6	2 2	9 9	10 0	7 7
10	6 0	4 6	—	2 10	Sunday	4 6	3 0	4 4	2 2	9 9	9 9	6 6
11	5 6	3 6	2 3	Sunday	6 2	4 8	2 8	2 20	2 0	9 9	5 6	5 6
12	5 6	3 0	3 8	2 11	4 2	5 3	2 6	0 20	2 0	8 6	6 6	5 6
13	6 0	9 9	Sunday	2 6	3 6	4 8	2 6	0 23	2 2	6 6	7 7	8 8
14	6 6	Sunday	3 4	2 6	3 10	4 6	2 6	0 23	2 2	4 6	7 7	8 8
15	Sunday	2 6	3 4	5 5	6 0	3 9	2 4	0 22	2 2	5 10	6 6	9 9
16	6 6	2 2	3 8	5 6	3 6	Sunday	2 4	0 23	2 2	6 0	6 6	8 8
17	7 6	2 2	4 4	4 0	Sunday	3 6	2 4	3 3	2 9	5 2	6 6	9 9
18	7 0	2 1	4 4	Sunday	4 2	3 0	2 4	5 0	3 3	4 4	5 5	7 7
19	2 2	2 4	4 8	4 4	5 0	3 0	4 8	3 3	2 2	4 6	4 4	5 6
20	6 0	2 6	Sunday	3 6	5 0	3 0	3 4	4 3	2 0	2 2	4 4	6 6
21	5 5	Sunday	Sunday	3 2	5 2	3 0	3 4	3 6	2 0	4 0	3 3	7 7
22	Sunday	4 6	6 6	3 6	3 10	4 6	3 0	7 6	2 6	0 0	3 3	7 7
23	5 2	5 0	4 2	5 0	3 4	Sunday	7 6	2 6	3 9	4 4	3 3	6 6

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Nov. 24	ft. 4 in. 6	ft. 3 in. 6	ft. 4 in. 10	ft. 4 in. 2	ft. 2 in. 10	ft. 4 in. 6	ft. 7 in. 6	ft. 2 in. 9	ft. 3 in. 6	ft. 4 in. 0	ft. 3 in. 0	ft. 6 in. 6
25	3 9	3 4	4 6	Sunday 6	2 10	4 6	7 0	2 4	3 0	3 6	2 9	6 0
26	3 6	6 6	6 0	3 6	2 8	4 2	6 6	2 2	2 8	3 3	2 7	6 3
—	—	—	—	—	—	—	—	frost	—	—	—	—
—	—	—	—	—	—	—	—	began	—	—	—	—
27	3 2	7 0	Sunday 6	3 0	2 4	4 5	5 0	2 1	2 2	3 6	2 9	8 0
28	3 0	Sunday 10	6 6	3 0	2 6	4 8	5 0	2 0	8 0	7 0	2 9	7 6
29	Sunday 8	3 10	7 0	2 10	2 3	7 8	5 0	2 1	9 0	8 0	2 9	8 0
30	2 8	3 6	12 0	2 0	2 2	Sunday	5 0	1 10	7 0	8 0	2 6	8 6
Dec. 1	2 10	3 3	overflown	2 2	Sunday 0	11 0	9 0	1 8	8 0	6 0	2 6	8 0
2	3 2	3 8	do.	Sunday 3	2 9	bank full	9 6	1 8	9 0	7 0	2 5	8 0
3	3 4	6 10	do.	2 3	1 9	do.	7 6	froze	10 0	6 0	2 6	7 0
4	3 0	7 6	Sunday 8	2 6	1 10	do.	6 0	over	13 0	6 6	2 6	6 6
5	2 8	Sunday 2	8 6	2 6	1 10	11 0	5 0	—	16 0	7 6	2 2	6 0
6	Sunday 6	5 2	6 6	5 0	1 8	Sunday 5	5 6	—	14 0	7 6	2 2	5 10
7	2 6	5 0	6 0	5 0	1 8	5 2	5 6	—	12 0	7 6	2 2	7 0
8	2 6	4 2	6 0	4 0	Sunday 7	5 5	3 4	—	16 0	6 6	2 2	6 6
9	2 6	3 6	6 0	Sunday 0	1 7	5 2	3 0	—	—	6 0	2 2	6 0
10	2 2	3 2	4 6	5 0	1 7	5 0	3 0	—	—	4 6	2 2	5 0
11	2 1	3 0	6 6	7 0	1 7	5 0	3 8	begins to thaw	no account taken till 18th Jan. 1798.	3 7	2 2	4 4
12	2 1	Sunday 0	Sunday 10	8 0	2 2	4 6	2 6			3 0	2 3	4 0
13	Sunday	3 6	6 6	8 0	3 8	4 10	2 6			2 7	2 3	4 6

	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800
Dec. 14	ft. 3 in. 2	ft. 7 in. 6	ft. 7 in. 6	ft. 7 in. 6	ft. 5 in. 2	ft. 4 in. 11	ft. 3 in. 6	ft. — in. —	ft. — in. —	ft. 2 in. 4	ft. 2 in. 2	ft. 5 in. 0
15	4 10	7 6	6 0	5 6	Sunday	Sunday	4 0	ice broke	—	2 4	2 2	5 3
16	5 8	8 0	5 6	Sunday	4 6	5 0	3 7	3 0	—	2 8	2 2	6 0
17	5 6	8 6	4 10	4 0	5 6	5 0	3 4	2 6	—	2 6	2 0	5 3
18	5 5	9 0	Sunday	3 1	5 6	3 8	2 6	2 9	—	6 0	2 0	4 6
19	5 10	Sunday	3 6	5 0	5 6	3 8	3 6	3 0	—	4 0	1 8	4 3
20	Sunday	9 6	3 8	7 0	7 0	Sunday	5 6	3 4	—	3 0	1 7	3 9
21	6 10	8 6	3 8	6 6	6 0	Sunday	5 6	3 4	—	3 0	froz. over till 4th Jan. 1800	4 4
22	6 8	8 0	2 8	7 6	Sunday	3 0	7 0	2 10	—	3 3	—	4 0
23	6 2	8 2	3 6	Sunday	6 4	2 8	8 0	froz. over	—	3 6	—	—
24	6 10	10 3	7 6	8 0	6 0	2 8	8 0	—	—	2 8	—	—
25	6 10	11 0	Sunday	—	4 8	—	8 0	—	—	2 6	—	—
26	6 8	Sunday	5 0	7 6	4 8	2 10	7 0	—	—	2 0	—	—
27	Sunday	7 0	6 0	8 0	5 0	3 2	6 0	—	—	2 0	—	—
28	6 6	6 8	6 2	8 0	3 8	Sunday	4 9	—	—	froz. over till 15th Jan. 1799	—	—
29	7 0	4 6	6 6	8 0	Sunday	3 3	5 0	—	—	—	—	—
30	8 6	—	7 0	Sunday	2 8	3 3	7 6	ice broke	—	—	—	—
31	9 6	6 8	4 6	6 0	2 9	3 0	7 0	7 3	—	—	—	—

SECT. III.—WEEKLY MARKETS.

“OF the 26 towns or villages having fairs, only 17 have markets. I know no place that has markets and no fair, except at Coalbrook-dale, where the increase of population, owing to the iron-works, has produced a market on Fridays, which is considerable. Coalbrook-dale is in the parish of Madeley, at which village a small market was formerly holden; but I mean not to inquire what places have right of market, but where markets are now actually kept.

Bishops-Castle has a good market every Friday. Great quantities of butchers' meat are then exposed to sale.

Bridgnorth has a market every Saturday.

Broseley every Wednesday.

Cleobury every Thursday.

Clun has a small market on Wednesdays.

Ellesmere has a market on Tuesdays.

Ludlow on Mondays.

Drayton on Wednesdays.

Newport on Saturdays.

Oswestry on Wednesdays. To this market flannel and Welsh webs are regularly brought.

Shifnal on Fridays.

Shrewsbury on Wednesdays and Saturdays. The Wednesday's market is for little else but butter, and thinly attended. The other is a full and plentiful market, and sheep and pigs are exposed to sale on every other Saturday. On Thursday is a market for woollen cloth, but the liberty of buying in the Cloth-hall is limited to the members of the drapers' company. This cloth is called Welsh-web: the article is chiefly manufactured in Merionethshire and Denbighshire.

Stretton,

Stretton, or Church-Stretton, has a small market on Thursdays.

Wellington has a market on Thursdays.

Wem on Thursdays.

Wenlock on Mondays.

Whitchurch on Fridays.

There were markets formerly at Acton-Burnell, Ryton of the eleven towns, &c.

SECT. IV.—FAIRS.

THERE are fairs at Albrighton on March 5, May 23, July 18, November 9, for horned cattle, sheep and hogs. A good deal of business is done at these fairs.

Albrighton is only a village, but it has several civil distinctions. The PITCHFORDS, Barons of Albrighton, were a family of considerable power*; and the TALBOTS, who afterwards possessed it, were a family also likely to obtain privileges and immunities.

Battlefield has a fair, August 2, for horned cattle and sheep. A good many ewes and lambs, and store-sheep, are sold here. There is no village, but a farm-house accommodates those who resort to the fair; and there are pens for sheep in a field adjoining.

Bishops-Castle has fairs on the Friday before February 13, the Friday before Good-Friday, which is the largest mart for oxen of three and four years old in the county: many are sold the day before the fair and the day after, as well as upon the fair day. The Fridays after May 1, July 5, September 9, November 13. The two last are great fairs for fat cattle and sheep, as well as for store oxen.

* Temp. Ed. I.

Bridgnorth has fairs on the Thursday before Shrove-tide, March 14, May 1, June 30, August 2, October 29. The last is a very considerable mart for horses, especially two years old colts of the draught kind, and for weanling calves. Quantities of cheese and salted butter are then exposed to sale: much of these articles is brought down the Severn from Montgomeryshire. Hops are another article; they are bought by the Welsh, who attend there with butter and cheese, and by the shopkeepers of that country.

Broseley fairs are April 25, and October 28.

Cleobury April 21, June 4, October 27.

Clun, Whit-Monday, and November 22. The last is a great fair for sheep.

Ellesmere has fairs on February 2, the third Tuesday in April, Whit-Tuesday, August 26, November 14. The second is a great fair for barren cows.

Hales-Owen has fairs on Easter-Monday and Whit-Monday.

Hodnet is a village, and has fairs on May 15, and October 20. The first is a good fair for barren cattle.

Llanymynech has good fairs for sheep and pigs on May 29, and September 23. At the last fair many sucking colts and some fat cattle are sold. Llanymynech is so much upon the borders, that the pigs stand for sale in this county and Montgomeryshire. The cattle and sheep chiefly in Denbighshire.

Ludlow fairs are on the Monday after February 2, the Tuesday before Easter, Whit-Wednesday, August 21, September 28, December 6. There are hops sold at the latter fairs.

Madeley, October 20.

Market-Drayton, or Drayton, has fairs on the Wednesdays before Palm-Sunday, June 19, September 19, and

and October 24. The two last are chiefly for calving heifers and colts, both suckers and two years old.

Newport fairs are on the Saturday before Palm-Sunday, on May 28, July 27, September 25, December 10.

Oswestry fairs are March 15, for oxen and barrens; May 12, for the same articles, and for cows and calves, and horses. June 19, August 15, Wednesday before September 29, December 10, for sheep, fat cattle and pigs. At the last fair are many fat pigs.

At Pulverbatch, a small village on the turnpike road between Shrewsbury and Bishops-Castle (pronounced Powderbatch) is a fair on September 27, chiefly for sucking colts and sheep.

St. Kenelms, a church with one house near it, in the parish of Hales-Owen, has a fair, for cheese only, on July 28.

Shifnal has fairs August 5, and November 22. At the latter fair many weanling calves are sold, and which have helped to improve the breeds of this county. Farmers within the reach of Shrewsbury markets can generally sell their sucking calves to the butchers for almost as much money as they give for weanling calves, of rather better breeds, generally speaking, at Shifnal fair.

Shrewsbury has fairs on the last Saturday in February, the Saturday after March 15, the Wednesday after Easter week, the Wednesday before Whitsunday; July 3, August 12, October 2, December 12. All these fairs are for horses, horned cattle, sheep and pigs; but most of the sheep and pigs are sold upon the day previous to the fair, or, if the fair is upon a Monday, on the Saturday before. Large quantities of wool are brought to the fairs in July and August, and salted butter and cheese to those in October and December. All these fairs are very considerable;

able; that in February has most barren cows, principally from the Cheshire dairies; that in March most store oxen; and there are very many fat hogs and cattle at the December fair.

Stretton, or Church-Stretton, has fairs on May 14, and September 25. The May fair is a very established mart for cows and calves: the other for sheep. There are two more fairs, by custom, viz. on Thursday before Shrewsbury March fair, which is the Saturday after March 15; and on the last Thursday in November.

Wattlesborough has a fair on August 5. There are the remains of a castle here; but there are very few houses. This fair is principally for sheep; there are some colts. Many standings for cloths and pedlar's ware are also opened here.

Wellington fairs are March 29, June 22, and November 17. That in June is a great fair for waggon horses.

Wem fairs are March 2, May 6, Holy-Thursday, June 29, November 22.

Wenlock, May 12, June 24, October 17, December 4.

Westbury, a village, is put down in lists of fairs as having a fair August 5. This is probably a mistake for Wattlesborough, as there is no fair at Westbury now.

Whitchurch fairs are Whit-Monday, and October 28.

SECT. V.—COMMERCE.

THE staple trade of Shrewsbury is in fine flannels and Welsh webs. The flannels are bought at Welsh-Pool, in a market holden for that purpose, every other Monday.

Most

Most of these flannels are made in Montgomeryshire, and some are made and more spun in the neighbouring parts of Shropshire. The flannel in Pool market sells from 9d. to 4s. per yard, in pieces of 100 yards long on an average. They are chiefly re-sold to the London merchants, who are the exporters. The webs are fabricated in Merionethshire and Denbighshire, and brought to Shrewsbury, where they are sold in a close market, that is, in a hall, where none but the members of the drapers' company can enter; but of late years much of this market has been anticipated by buyers in the country, which often forces the Shrewsbury drapers to send there themselves. Webs are about 200 yards long, and may be worth from 1s. to 20d. per yard. The webs that are made in Merionethshire are about seven-eighths of a yard wide, and are called the *strong*, or *high country cloth*. Those made in Denbighshire, are called small, or low country cloth. The former, after they are bought by the drapers, have the wool raised and sheared by men, called at Shrewsbury shear-men, or they are sent to the fulling-mill to be thickened, and are then exported in bales of different sizes, some containing even 2000 yards. The ultimate markets are Holland, Germany and America. The *small cloth* is about the one-eighth of a yard narrower than the other. The web is the same length. Many of these are sold at Oswestry market, and are generally dyed before they are exported. They supply clothing for the slaves in the West Indies and South America. The manufacture in Wales, by means of jennies introduced into farm-houses and other private houses, is four times as great, I am told, as it was twenty years ago. Formerly the Shrewsbury drapers bought the whole that came to Pool; now drapers or shopkeepers from Wrexham and other places attend the Pool market. The wool of the country is insufficient for the

manufacture. Mr. AIKIN has given a minute account of this branch of trade in his *Welsh Tour*, referred to in speaking of the mineralogy of the county, and very properly does not attempt to fix its extent; for though he quotes what Mr. PENNANT has said of its amount, generally, he admits the want of data for a proper calculation.

SECT. VI.—MANUFACTURES.

“THE number of blast-furnaces for iron between Ketley and Willey, about seven miles distant, exceed any within the same space in the kingdom. We have no reason to apprehend that the coal will fail us. Some of our veins of coal and iron-stone are said to make iron of the first quality. The consumption occasioned by the number of hands employed in these works has been a great spur to our agriculture*.”

“In the coal district are the following iron-works. In the south is Willey, Broseley, Calcot, Benthall, and Barnets Leasow: these are on the south side of the Severn. On the north side of this river is Madeley Wood, Coalbrook-dale, Lightmoor, Horsehay, Old Park, Snedshill, Ketley, Donnington, Queen’s-Wood, and Wrockwardine-Wood†.”

“These works employ about 6000 hands; and annually about 260,000 tons of coal are raised in this district. It is worth remarking, that Coalbrook-dale can

* EDWARD HARRIES, Esq.

† “There are now (1802) on the south side of the river Severn, at the different iron and coal works, 25 fire-engines, and on the north side of the river 155, making together 180 fire-engines. Thirty years ago, I believe there were not 20 in the same district. The second lever-engine that was erected was upon a colliery in Madeley parish.”—Mr. W. REYNOLDS.

justly

justly claim the merit of having, in the beginning of this century, introduced upon a large scale the use of coaked coal, as a substitute for charcoal in making of iron*.”

Garden pots, and other vessels of a coarse fabric, are made at Broseley. At Caughley, in that neighbourhood, is a china manufacture of great excellence. The blue and white, and the blue, white and gold china there, is, in many instances, more like that from the East than any other I have seen. These works have been purchased by the proprietors of a later establishment, the Coal-port China-works, and are confined to the ware specified above. At Coal-port coloured china of all sorts, and of exquisite taste and beauty, is made. More immediately at Coal-port, for the china works are near it, is a manufacture of earthen-ware, in imitation of that made at Etruria, and called the Queen's, or Wedgwood's ware†. In the lordship of Cardington, in this county, a quartz and clay may be gotten for compounding this ware, the former superior, as I am well informed, to that imported out of Carnarvonshire to the Staffordshire potteries. There is a glass manufacture at Donnington. At Shrewsbury is a company of shearmen, who have been for a long time the shearers or finishers of the Welsh flannels.

Various branches of the flannel manufacture are carried on near Shrewsbury, and a large mill for the purposes of spinning, fulling, &c. was erected at the Isle, between four and five miles N. W. of Shrewsbury, near where the Severn, by its windings, forms a peninsula. There are also mills for dying woollen cloth in this county; one of the more considerable is near Lebotwood, about nine miles north of Shrewsbury.

* Dr. TOWNSON.

† “At Coal-port is also a manufacture of ropes and one of chains, now much used for the same purposes.”—Mr. W. REYNOLDE.

Lately a large manufacture of coarse linens, and more particularly of linen thread, has been established near the north suburbs of Shrewsbury. A considerable wholesale trade in gloves is carried on at Ludlow, for the London market.

SECT. VII.—POOR.

THIS Section has been so much anticipated by that upon Poor's-rates, that any further observations upon the subject in this place seem unnecessary.

SECT. VIII.—POPULATION.

“ THE population of this county is certainly increasing, and has been rapidly so for some time past; the increased business in working the mines of this county,—the great demand for coals, both for home consumption, and also for exportation by the new canals into other counties, more particularly the extended iron-works at and around Coalbrook-dale, have required the employment of a great number of additional hands, and consequently increased population. And the increase of manufacturers necessarily makes an increase of husbandmen; for in a neighbourhood where there are considerable manufactures, and consequently a great consumption of provisions, land becomes more valuable; it also gains additional manure, and there is encouragement, from the high price of provisions, to cultivate and improve it, which cannot be done without inhabitants; but with such encouragement, inhabitants are found soon to be produced; for besides those husbandmen
and

and their families, who are tempted by an increase of wages to remove from other places, it is found, that where the labourer has constant work and good pay (as he has in these situations) he naturally marries early, and produces many children, who find early employment and maintenance: so it will be found, that flourishing manufactures in this county, as in others, increase population, not only by the increased number of workmen employed, but also by adding to the number of husbandmen and labourers employed in the cultivation of the neighbouring land. And although the cultivation of land in this county is in the major part very defective, yet it must be observed, that in the eastern part of it, bordering on the manufactory of Coalbrookdale, Ketley, and Lilleshall mines, &c. on one side, and the Staffordshire iron, &c. manufactories on the other, the improvements in agriculture have been very considerable, and both the produce and population greatly increased.

“ About twelve years ago, this fact respecting population was made very apparent by the inquiries of the Rev. Mr. HOWLETT, Vicar of Great Dunmow, in Essex, and particularly so in the parish in which I live, the Rector of which, the Rev. Mr. WOODHOUSE, in his correspondence with Mr. HOWLETT on this subject, was enabled to present him with a statement of *facts*, by which it clearly appeared, that the population of this parish had been nearly doubled since the time of the Revolution, yet without the assistance of any trade or manufacture *in the parish*, but merely from a more extended and garden-like cultivation of the land, from the introduction of the turnip husbandry, and by an enclosure of field and common lands. This letter Mr. HOWLETT has printed, as an Appendix to his Inquiry into the Influences of Enclosures, second edition, 1786. I may further add, that since the year 1782,

when these observations were made, the population of this parish has been increasing: most certainly the inoculation for the *small-pox*, and the increased knowledge of the physical practitioners in the cure of *fevers*, has been most essential to population throughout this kingdom *."

The population of the parish of Madeley, in which Coalbrooke-dale is situated, has increased very much. In January 1782, it contained 440 houses, 560 families, 2690 persons: in March 1793, it contained 754 houses, 851 families, 3677 persons †; an increase, in eleven years, of 314 houses, 291 families, and 987 persons. In viewing this increase, it is pleasant to observe that the houses are increased in a greater proportion than either the families or persons; which bespeaks greater prosperity and comfort than heretofore, and has arisen, as well from the benevolence of the lord of the manor, as from the works. He has built many comfortable houses for old and distressed persons, and granted a great number of leases of waste land, in the proportion, if I recollect right, of about one-eighth of an acre to each person to build on, they paying a fine of five guineas for a lease of 99 years, and five shillings a year ground-rent. In 1782 we observe the proportion of persons to each house was a fraction above 6, and more than $4\frac{3}{4}$ to each family. In 1793 the number is only $4\frac{3}{4}$ to each house, and better than $4\frac{1}{4}$ to each family. I think a large number per house does not generally indicate a large population. I was led to this suspicion by observing, that in proportion as there were few or many cottages to the farm-houses of a parish, the proportion of persons per house rose or fell. Thus the numbers per house rose in districts of improved cultivation; but where

* Original Report.

† March 25, 1801, 943 houses, 22 of them void; 942 families, 4758 persons.

small

small farms had been added together, and many of the houses taken down. In these small farms, the farmer's family, perhaps, did all the business: in large farms there must be many persons employed besides the farmer's family; and if there are not day-labourers near enough to be hired, servants must be kept in the house. But if each of these servants had a cottage, he would also have a family, increasing the population of the district, but diminishing the numbers per house. Farmers keeping many servants instead of hiring day-labourers, certainly checks population, though not exactly in proportion to the persons that are thereby kept unmarried; because the number of illegitimate children are increased from that circumstance. I have found the population of parishes vary in the average number per house, from four and one-fifth to nine and one-half, rising or falling for the most part with the paucity or plenty of cottages in proportion to farms, or as the farms were large or small: and in dividing the rent of the parish by the number of persons in the two extreme instances recited above, I find that where the average number per house was only four and one-fifth, the persons were so numerous, that it afforded only two pounds to each person, and when it rose to nine and one-half, it amounted to 8l. 10s. per person. Out of 91 parishes now before me (not selected, but presented by chance from natural and artificial situations of great variety, and belonging to this and four other adjacent counties), I find the general tenor conformable to these specimens.— There are exceptions indeed, but such as may be accounted for; for instance, in country parishes near towns, where the lands are principally rented by the townsmen, there is a small number of houses, and a large division of rent per person. The average number per house of the

91 parishes taken together, is somewhat more than five and one-tenth.

Since writing the above, the return has been made under the Act of the 41st GEO. III.—That return states this county to contain 31,182 inhabited and 929 void houses, 34,501 families, 82,563 males, 85,076 females, 45,046 persons employed in agriculture, 35,535 mechanics, and 70,504 persons not comprised in either of those two classes. The total number of persons 167,639. It is possible that a very few districts may be omitted in this return, and that some may have been counted twice over, from the circumstance of townships and parishes not being always co-extensive. The inaccuracy of the return, with respect to the number of persons employed in agriculture, is very obvious. The Act does not say whether it was the intention of the Legislature to confine this list to males, and there are three ways in which it has been made. In some returns, the males only employed in agriculture are given; in others, the list contains also women keeping farms, and dairy-maids: and again in others, all the men, women and children of a farmer's family, or of a labourer's in farming business, are added to that class. The same is the case in the return of the mechanics, and this return is further doubtful, as miners are in some instances added to it, and in others stated as belonging to those not comprised in either of the specified employments; whilst the persons making the return in some parishes, have seemed to consider it necessary to class all the inhabitants under the head of agriculture or of trade; as I observe them so stated where I know there are resident clergymen, at least, of respectability, and who have families.

CHAP. XVI.

OBSTACLES TO IMPROVEMENT:

INCLUDING GENERAL OBSERVATIONS ON
AGRICULTURAL LEGISLATION AND
POLICE.

“ WHERE gentlemen have agents who are experienced in husbandry, they cannot do better than to suffer such to assist the tenants, by paying for part of their draining, marling, watering, embanking, &c. for which they may, in proper and fair time, obtain from 10 to 20 per cent. for their money: but extraordinary it is, that very few gentlemen will come into this measure, of assisting their tenants with money for improvements; not even those who are satisfied with 3 per cent. for their capital, when they purchase additions to their estates *.”

It seems best that the landlord should be the improver. He has an interest in making full and effectual improvements; for then he can set his lands for a fair price: whereas if tenants make, or rather attempt to make improvements, the effort will be limited, as their interest is limited, and an improvident saving will oftentimes counteract the good that was intended. It is unpleasant too to raise the rent of a farm under such circumstances. The tenant will be suspicious of paying in two ways for what he will call his improvement; and a landlord may be doubtful how far the tenancy has compensated his trouble and expenses. In addition to the slowness with which

* Original Report.

improvements spread through a country, there is, perhaps, no greater obstacle to improvement than the want of capital in both landlord and tenant. A majority of our farms are cultivated with an insufficient capital, and consequently the due quantity of grain is not raised from the number of acres sown, and the due quantity of acres is not brought into cultivation. Whilst so many wastes are unenclosed, and so many are enclosing, we have to see (as was before hinted) how much land can be managed with a given capital: but as commons are made productive and population increases, the time may come when the object will be changed, and we shall have to see on how small a quantity of land a given capital can be beneficially employed; and it must be in this latter state of a country that agriculture will attain its perfection. It may be said of legislation and police, as connected with agriculture, as well as with most other subjects, *that there is more want of a due execution of existing laws, than of new laws.* The office of a justice of the peace is somewhat expensive, and very laborious, more especially as the same persons are, in general, the acting commissioners for taxes. Still many country gentlemen do great service to the public, by submitting to what I may call this disagreeable necessity; for I know not whether it is not essential to the proper strength and harmony of our constitution, that persons of independent fortune should continue freely to execute the laws committed to their trust; that they should as magistrates, oversee and direct the police of the country; and as commissioners of taxes, judge between the executive power and the people, and that without fee or reward: because the notoriety of their having no other interest in the trouble they take, than what is common to all the subjects of the realm, ensures a more ready acquiescence in their decisions, and must add
to

to the weight of beneficial influence. Still in the execution of most laws there must be some extent of co-operation. Few persons like to be informers—few like to be complainants, unless their passions are warmed, or their interests distinctly injured. From the former circumstance, many trivial accusations are brought forward: from the latter, thieves are apprehended and prosecuted. But that cattle are straying in the roads; that nuisances are left on the highway; that work is not provided for the poor; that servants are enticed to the ale-house—upon these and other occasions, individuals are rarely sufficiently injured to give their time and trouble in praying justice, though there are laws, which, if inquired after, would redress most of the evils complained of. A watchful magistrate may do much, but he cannot do every thing. Persons of large fortune (as has been observed before) should consider the burthen of this office as a kind of tax arising out of the interest they have in the welfare of the country; and though it is far from being the case, that there is no feeling of this kind, yet it were to be wished that this feeling stood higher, and that persons of property, instead of wishing to educate all their sons for situations, by which they may advance the honours or opulence of their families, would consider how the heirs to large estates could be best formed to that highly important, but oftentimes mistaken character, a *country gentleman*. Nothing low, or idle, or flippant, or profligate, belongs to this character. Like every other post in human life, it is a post of duty. Independent of the assistance required from him in administering the justice of the country, he should be the adviser and peace-maker of his district; he should co-operate in the improvement of rural arts; he should be the pattern of improved husbandry; he should set an
example

example of scrupulous obedience to the laws in his own person, and endeavour to sustain the tone of Christian morality throughout his neighbourhood. And in what situation of a country will the possessors of large fortunes, so acting, be deemed useless or inconvenient? Or can any country be endangered, that is cemented by a middle order, whose powers and services are so happily mingled?

CHAP. XVII.

MISCELLANEOUS OBSERVATIONS.

SECT. I.—AGRICULTURAL SOCIETIES.

THERE are no agricultural societies of any standing in this county: one has been lately established at Drayton, upon the N. E. borders, and another at Shifnal, upon the east borders; both these districts adjoin, and are connected with Staffordshire.

SECT. II.—WEIGHTS AND MEASURES.

WHEAT, barley and pease, are sold by the strike or bushel, which in Shrewsbury market is 38 quarts, but in some other markets it is 40 quarts. The 38 quarts of wheat should weigh 75 lb., the 40 quarts 80 lb. In other markets in the county, the bushel of wheat does not weigh more than 70 lb.: this is chiefly applicable to the eastern district. The bushel of flour is every where 56 lb. Thirty-eight quarts of barley weigh about 65 lb. A bushel of oats means three half bushels of the customary measure at Shrewsbury, and should weigh better than 93 lb. In other markets it means $2\frac{1}{2}$ bushels, sometimes heaped, sometimes stricken, and sometimes a medium between

tween both. A bag of wheat means three bushels customary measure. The quarter bushel is called a hoop, or peck; and the fourth of that is called *a quarter*. Butter, when fresh, weighs 17 oz. to the lb.; when salted, 16 oz. The last is reckoned by gawns, which signifies 12 lb. of 16 oz. in Shrewsbury, and 16 lb. of 16 oz. at Bridgnorth. Cheese is sold by the cwt., which at Shrewsbury means 121 lb. and 113 lb. at Bridgnorth. Coals are sold by the ton, which is 20 cwt. of 112 lb. at some pits, and 120 lb. at others: the stack is now rarely used; it was a measure of four feet square, and would sometimes weigh 25 cwt. Hay is sold by the ton, of 20 cwt. of 112 lb. Home-made linen cloth is sold by the ell, which measures a yard and half.

The acre is the statute acre.

The workman's rood in digging is eight yards square; in hedging eight yards in length.

An attempt was made by order of Sessions some years ago, to introduce an uniformity of weights and measures, and it was accomplished in Bishops-Castle market, by the perseverance and activity of a neighbouring magistrate; but as the same attention was not continued in other markets, the old measures were in time introduced again.

There is an error, I believe, in the standard measure, that in the Exchequer not agreeing with the requisitions of the 13 WILL. III. c. 5. By that statute "the bushel is ordered to be $18\frac{1}{4}$ inches round, and 8 deep; it would consequently contain, (cubic inches) : - - 2150

" That in the Exchequer contains, - - - 2124

" Eight of the standard gallons, - - - 2168

" Thirty-two do. quarts, - - - 2240

" Sixty-four do. pints, - - - 2027

" The difference between the bushel and 32 of the
quarts

quarts is, therefore, 116 cubic inches, or nearly three pints and a half."—I believe this account is taken from a letter of Mr. CHARLES DUNDAS.

CONCLUSION.

MEANS OF IMPROVEMENT, AND THE MEASURES CALCULATED FOR THAT PURPOSE.

MR. HARRIES, whose name has so frequently appeared in this Report, and whose attention to, and experience in, the management of his valuable estates, gives weight to his observations, recommends "a general act of parliament for the effectual draining of low lands; which should compel the carrying on of proper drains through different estates, so that the obstinacy of an individual should not hinder a general improvement; should provide for defraying the expense by a rate where necessary, and for settling disputes relative to the right of water for irrigation." He recommends also, "An act of parliament for the sale of all grain by weight. Of improvements not cognizable by the Legislature, he recommends sowing rye for sheep upon wheat stubbles, previous to barley, and especially before turnips." This practice, I think, would answer particularly well on farms connected with commons, where the meadows often suffer severely by the ewes and lambs being upon them till the time for turning upon the commons; so that in dry summers, unless the meadows can be watered, and which is yet but a partial improvement, the crops of hay are often very short. It is not desirable to graze even water-meadows

A a

dows so late as is often done by sheep in the hill country, unless the command of water is ample.

Mr. HARRIES recommends the following course of crops, for "sound mixed land,

" 1. Pease ; then dung for

" 2. Wheat.

" 3. Barley or oats.

" 4. Clover one or two years ; then lime for

" 5. Wheat.

" 6. Barley or oats, and dung for

" 7. Turnips, cabbages, vetches, buck-wheat, or potatoes.

" 8. Barley.

" 9. Clover, dung repeated.

" The vetches, if grown, may be used for soiling horses, or mown for hay : the land also to be cleaned *."

Whatever has occurred to myself as matter of improvement, has been incidentally mentioned in the different Sections, so that I have little to add in the conclusion of this Report, except an apology for not having confined myself so strictly to the subject of each Section as the plan may seem to require ; but, besides that the ideas were naturally suggested by the Section then under consideration, in a work that is more likely to be looked into occasionally, than read through, it may be better, perhaps, to repeat some ideas, as matter of explanation, or to guard against mistakes, than take it for granted that every division will be consulted, or brought to bear together upon the reader's mind. So far as I have been favoured with assistance, I have expressed my sense of its value as I went along. I have given every respectable opinion that was handed to me, either through the Board, or as matter of

* EDWARD HARRIES, Esq.

private favour, without encumbering the same with any observations of my own. If I appear to differ with any of those opinions, I say of those instances, and of every part of the Report for which I am responsible, that I sincerely and earnestly desire it may be regarded as a work of no pretensions on my part, beyond that of having attempted to give such information as may lead to inquiry. This county has not many legitimate objects of an Agricultural Report, strictly so called. The Original Report, however, contains much valuable information, and it cannot be doubted, I think, but the science of agriculture has been considerably advanced by several of the County Reports, and other publications of the Board: few persons, perhaps, engaged in rural concerns, can read the least useful, without some accession of knowledge or of ideas. If the institution of the Board was prompted by what may be called the critical state of agriculture, compared with the commerce and population of the country; and if difficulties that were then apprehended, have been largely added to, by adverse seasons and circumstances, they cannot be fairly charged upon the establishment; and this much may be conceded to the deliberations of the Board of Agriculture, and to all the County Reports, that whatever difference of opinion there may be as to the value of the one or the other, yet if the discussions of the former put Gentlemen upon thinking of the improvement of the country, and if the latter extend their thoughts more widely, and apply them more specifically, a benefit is clearly obtained. And in this point of view I have ventured to introduce, as matter of consideration, not of prescription, such subjects as appeared connected with the welfare of a country life.

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APPENDIX.

THE public are indebted to Mr. EDWARD POWYS for the following interesting account of feeding cattle with green food, together with other ingenious and valuable observations in agriculture, and which have been referred to in the course of the foregoing work.

“ Abby, 24th December, 1795.

“ I conceive the principal object respecting agriculture in the present state of this country, is to procure the greatest possible supply of the necessaries of life within the kingdom itself, and one principal means of doing this, is, to raise the greatest produce from a given quantity of land.

“ To effect this, every encouragement should be given by land-owners to the cultivation of grain and turnips; because I look upon the produce of an acre of grain to be, to the produce of an acre of grass, in the proportion of at least fifteen to two, in furnishing the necessaries of life. I suppose the grain made into bread, and the grass digested by a feeding beast, and changed into an increase of weight.

“ One great means of increasing the growth of grain and turnips, I think would be to encourage the farmer to

make as much manure as possible. This would be effected by allowing him to sell all his wheat and rye straw, with the restriction of laying out the whole price in manure; and by gentlemen, who have land in their hands, trying the experiment of keeping their cattle and horses in the house upon green food great part of the summer.

“For these last six years, I have sold all the wheat straw I did not want for thatching and the beds of certain kinds of horses, and can assure you, that the same farm has produced for some years back one-third more grain, and keeps double the live-stock it did six years ago.

“As a proof that what I say, of keeping cattle in the house in summer upon green food, is not matter of theory only, but of practice, I shall mention my own experience.

“For these last five years, I have kept eight or ten waggon-horses in the stable upon clover, cut and carried for them once a day; the small waste that they made was thrown into a low cratch (or receptacle, with staves on each side) for my pigs, which have generally been from 25 to 40. My horses and pigs thus fed, have eaten, between the beginning of May and corn harvest, from $2\frac{1}{2}$ to $3\frac{1}{2}$ acres, according to the goodness of the clover. My horses have been, by this means, in much better condition than if turned into a field; there has been a saving of at least eight or ten acres of clover for other stock; a great deal of the richest manure has been made (much more, and richer, than in the same time in winter), and the additional daily expense has been, one man less than half his time, in cutting, raking and carrying with a horse and cart, one load each day.

EXPERIMENT.

<i>Dr.</i>	£. s. d.	<i>Cr.</i>	£. s. d.
One man half a day for 13 weeks, at 4s. per week, -	2 12 0	Eight acres of clover saved by this experiment, at 5os. per acre, -	20 0 0
One horse, 13 weeks, at 6s. -	3 18 0	Manure, at least, -	10 10 0
	6 10 0		
Profit, -	24 0 0		
	30 10 0		30 10 0

“The first year I tried the experiment, the manure made was estimated by a good farmer at 20l., but I wish to make allowance for the value of the straw, and the manure that would have been made by the horses standing in the stable the usual hours in summer.

“I must endeavour to remove an objection that may perhaps be made to this experiment, by observing that I cannot think land injured any more by the green food being cut by the scythe, than by cattle or horses; and as to the dung that is dropped in summer, it breeds flies, and does more harm than good. I have ever thought land exhausted infinitely more by its produce being suffered to ripen and seed, than by its being cut in a green state. The advantage I had derived from this experiment, induced me last summer to try whether cattle might not be treated in the same way.

“I began with putting into stalls 19; I afterwards increased my stock fed in this manner to 50, consisting of horses, feeding cattle, milking cows and colts, besides a large quantity of pigs.

“The horses, as usual, answered well.

“The feeding cattle came on much faster than I ever saw them in summer. The milking cows fed very much, and milked very well. The colts did well, and lived chiefly upon the refuse of the cattle. The pigs, as usual, ate the refuse of the horses.

“ The quantity of land run over with the scythe for this purpose was :

“ Fourteen acres of trefoil, very moderate, on account of the clover root having died in winter.

“ Two acres of vetches, very moderate, on account of the severe winter.

“ Five acres of very good grass.

“ The cattle were turned out late at night for about six or seven hours.

“ The trefoil caused some trouble, on account of the cattle sometimes swelling, but brought them on very well, though they throve best upon the winter vetch or tares, and upon the grass. The daily expense was one old man of more than 70, to feed and clean them, another young man to cut, rake, and carry the food with a single horse cart.

“ If this stock had been turned out, I should suppose they would have run over at least 60 acres, if the crop had been good, and much more, if the indifferent trefoil is considered.

EXPERIMENT.

<i>Dr.</i>	£. s. d.	<i>Cr.</i>	£. s. d.
Two men, 13 weeks, at 14s.	9 2 0	Twenty-nine acres saved,	
One horse, do. 7s.	4 11 0	at 50s. - - -	97 10 0
Profit, - - -	13 13 0		
	83 17 0		
	97 10 0		97 10 0

“ Any person that intends to practise this method, should begin to cut his green food so early in spring, that he may be able again to mow the same ground from hay to corn harvest.

“ I have before observed, that I never saw cattle in summer come on so fast. I speak this not only from my own observation, but from that also of several farmers and butchers, who came through curiosity or business frequently

quently to visit them. The most feeding green food is winter vetches; and the most advantageous mode of cultivating them I think is, to plough up a clean stubble (that is intended for turnips) manure it, and sow it with vetches soon after corn harvest. When the vetches are all cut in May and June, or rather in the latter month, the field may be ploughed and sown with turnips for a winter crop.

“ From corn harvest till September 22, my cattle were all out in the fields at grass. I then took up 30 into stalls and fed them with turnips which had been sown early in May, and which had arrived at a very good size. My first field of turnips has been carried off, ploughed and sown with wheat, which has been above the ground some time, and looks very promising.

“ I have practised this scheme of sowing turnips in May, carrying them off before the beginning or end of the following November, and then sowing the piece with wheat, for these last three years. And I have found this wheat much more productive than any sown after any other crop or fallow. I am speaking of dry sown land.

“ One year I got up all the turnips of a field, topped and butted them (throwing the tops and butts in heaps by themselves) carried the tops immediately as they were cut to a bare stubble for my cattle and sheep, and laid the butts up in large heaps either under cover or in my stack-yard, with straw over them. Where there was no straw in layers between them, they kept for two or three months; some that had layers of straw every foot or half yard perpendicular, soon began to decay near the straw, which was made to heat by the moisture from the turnips.

“ From these experiments upon turnips, and from observing that dry land of my own, though it produced crops of grain or turnips for many years together, with the change
of

of clover (mown twice in the same year) only once in five years, did not lose any of its power; I have conceived that much more grain might be produced upon well cultivated farms. Wet land that is well cultivated might bear, in regular succession, crops of turnips, wheat, and barley or oats. Dry sound land may also bear the same succession when an early crop of turnips is wanted; and when turnips are wanted to stand the winter, a succession of turnips, barley and wheat.

“ I think it is much more advantageous to carry all the turnips to cattle in stalls (except a very few left for sheep) than to eat them on the land, because they furnish much more food and manure. I am aware that many gentlemen of landed property will object to this constant tillage; in answer to which I shall only observe, that it has been my opinion and practice, never to have any grass land that is not worth 40s. an acre; never to plough my grass land, but to till the rest constantly, with the intermission now and then of turnips and clover, the latter only for one year.

“ The farm I have above alluded to, is about 240 acres; of which I have in grass land about 90 acres; in tillage for grain and turnips about 120 acres. The rest is generally clover, unless I have a single fallow for wheat upon a field of wet land.

“ I repeat it once more, that the interests of the public, of the landlord, and tenant (for I know of no distinction, when many years are taken into consideration) are united in the greatest produce of the necessaries of life; and that if arable land is kept clean and full of manure, it receives no injury from producing the greatest quantity of grain. The increased produce of land benefits the public in too obvious a manner to enlarge upon. It benefits the landlord,

lord, by his being able, at the expiration of certain fair intervals, to raise the rent of his farm ; and the tenant or occupier, by getting more profit from a given quantity of land, and with nearly a given capital.

“ I have recommended turnips once in three years, because I think land requires cleaning once in that time, and because it is thus effected, without losing the benefit of a crop in any year.

“ Much has been lately said about the superior advantage of cattle over horses in farmers’ teams. I think some horses must be kept, for the farmer to take his grain to market, and to carry his coal and lime. If he is so near a large town, that he can draw at least two load of dung in a day, he will also want them for that purpose. Other team-work may very well be done by cattle. But I think cows are much more useful and beneficial than oxen, and that it would be an advantage to the kingdom if few or no oxen were reared. The uses of cattle are to work, milk and feed. I have seen barren cows work as well as oxen ; they require less keep, and walk faster. Oxen are of no use to the dairy, and they will not feed so fast as cows.

“ When first I commenced farmer, I followed the example of my predecessor, in feeding chiefly oxen ; but I soon found that cows fed much faster and on less meat, and for some years past have carefully avoided having any oxen in my stalls.

MEADOWS.

“ It should be considered as a great object of every landlord, or his steward, to procure watered or flooded meadows.

“ The best means of doing this is, to place the farm-
yard

yard on such an eminence of the farm, that a stream can be procured to run through it, and afterwards over the greatest quantity of meadow land.

“ Common meadows ought to be well manured once in three years, and will then produce one ton and a half of hay per acre, and a pasture from the middle of September to Christmas.

“ Good watered meadows will bear to be grazed from the beginning or middle of August till May following, and will between that time and hay harvest produce one-fourth of hay more than the other.

“ The difference of the profit of watered meadows over common, I think is annually as underneath :

“ One-third of 5l. (the expense of manuring an acre of land)	-	-	£. 1	13	4
“ One half ton of hay additional,	-	-	1	5	0
“ Difference of the value of grazing,	-	-	0	11	8
			£. 3	10	0

“ But besides the produce and profit, there are two other very great advantages in watered meadows. The one, saving manure for arable land; the other, keeping the pastures free from stock the beginning of spring.

“ I have hitherto only mentioned a stream that runs through a farm-yard, but I have frequently observed very great advantages derived from nothing but clear spring water being turned over grass land.

“ If a farmer has a greater command of water than he wants for his meadows and pasture land, he may occasionally till some of them for two or three years, and they will produce great crops without manure. I saw this practised with great success this last summer, by the late Mr. BAKEWELL, of Dishley, Leicestershire.

SIZE OF FARMS.

“ Much has been lately said upon the size of farms, from the high price of grain being supposed to arise from the opulence of the farmer, and his being able to keep back his grain from the market. I might combat this assertion by the well-known fact, that at the harvest of 1794, there was not a fortnight’s consumption of wheat in the kingdom, and yet the price was moderate. I might also add, that there never was so much wheat brought to market before Christmas as has been for these last two years, and that it has only been when wheat was plentiful, that any of the stock remained in stacks at harvest; but I think the high price is known by sensible thinking people, to arise from other causes. I shall therefore proceed to observe, that farms of from 200l. to 800l. per annum, and upwards, are much more beneficial to the public, the landlord, and tenant, than farms of from 50l. to 100l. per annum. The public are benefited by fewer people and horses being kept upon one farm of 300l. per annum, than upon six of 50l. each, to do the same work, and therefore by a greater produce being left, after the supply of the families, for the consumption of the kingdom at large.

“ The landlord is benefited, by having fewer buildings to erect and repair, and by having more opulent tenants. The benefit of a large farm to the occupier I need not enlarge upon. The misery of the small farmer, under 50l. per annum, is extreme. He has not constant employment for himself and family (if at all large) upon his farm; he is in general above working day-labour, is unable to exert himself and improve his small tract of land, and sits by the fire-side with his family great part of the winter, lamenting

menting that his farm and his capital are not larger, and brooding nothing but discontent and indolence.

“ But while I am making these observations upon the advantage of large over small farms, let me notice the great benefit and comfort that the common workman, in any line, derives from sufficient grass land being attached to his dwelling to keep a cow in summer and winter. The landlord will also receive benefit, as well as self-satisfaction, from being the cause of the plenty that the produce of a cow makes in a large and poor family.

“ I can from experience assert, that the cottager can afford to give his landlord one-third, if not one-half, more for that small quantity of land than a farmer. The value of the cow is generally more than one year's rent, and the addition of a small cow-house is a trifling expense.

“ I cannot help recommending this the more strongly, because I know well, from experience, the astonishing comfort and advantage that a poor family receives from the produce of its cow, and that it is also for the interest as well as inward satisfaction of the landlord.”

FINIS.

(2)

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